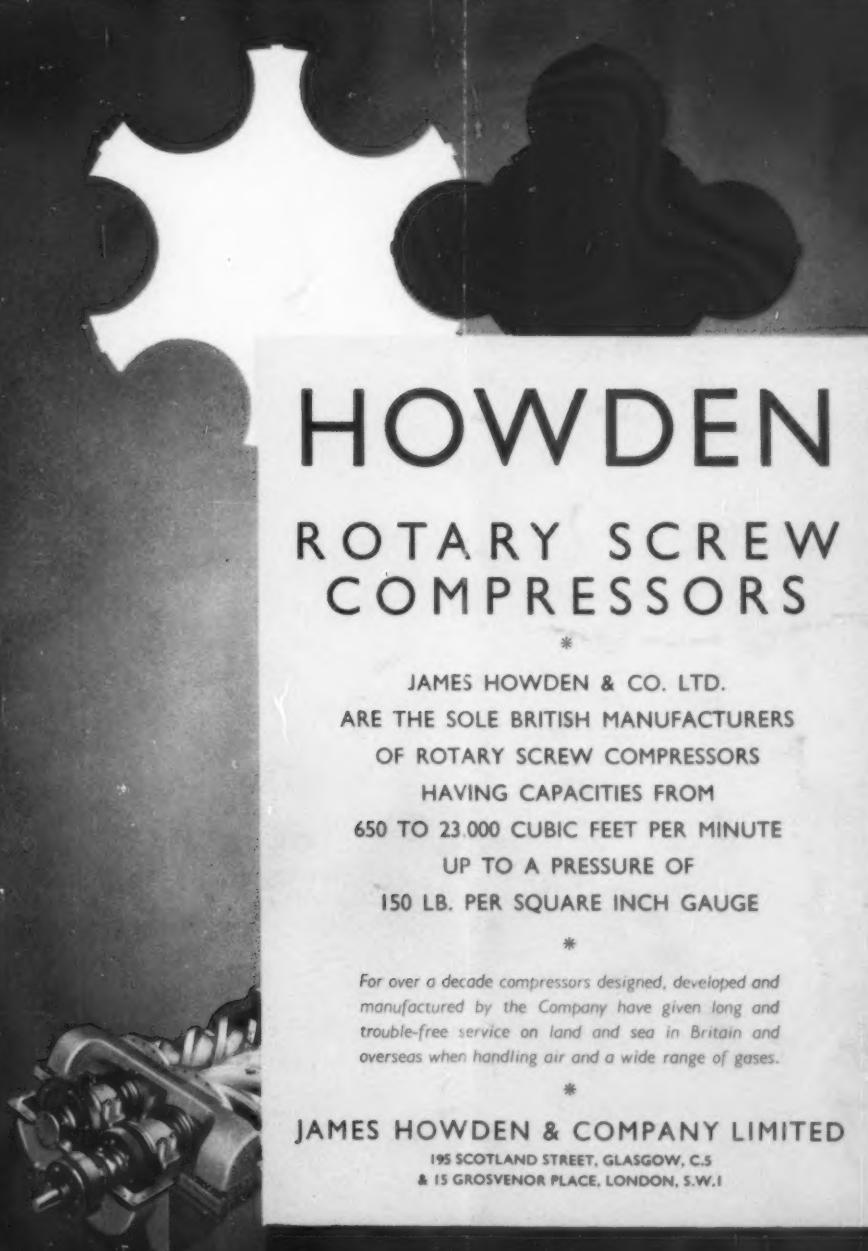


The Mining Journal

LONDON, DECEMBER 12, 1958

Vol. 251. No. 6434.

Price Ninepence



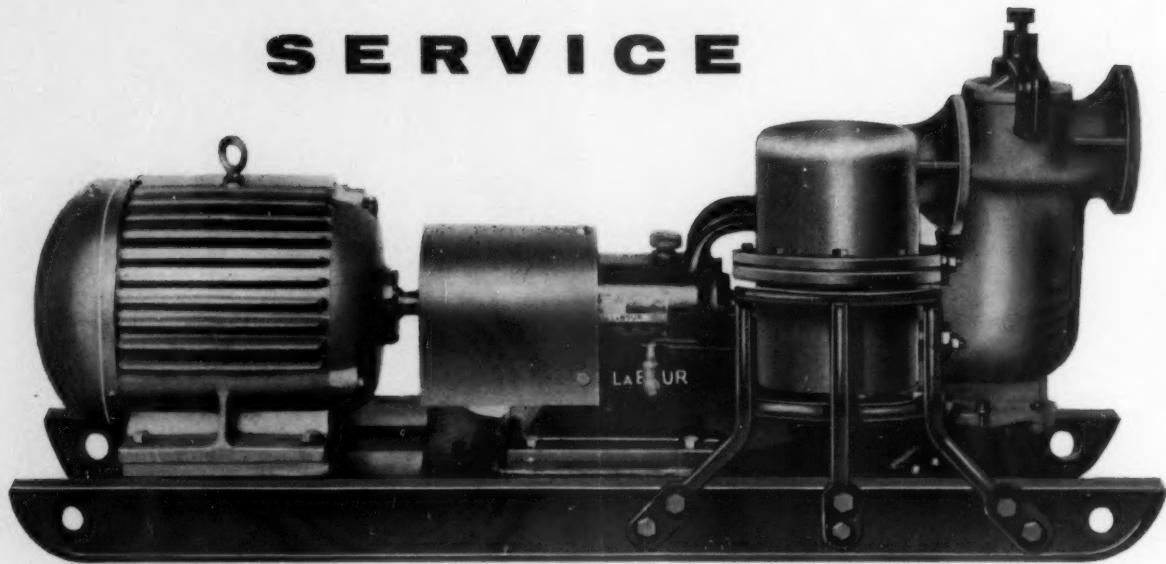
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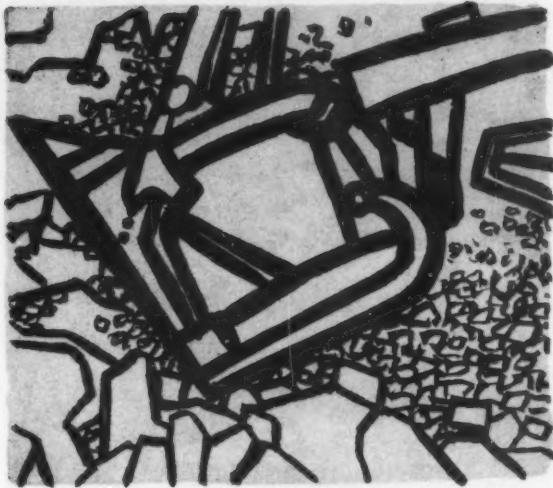


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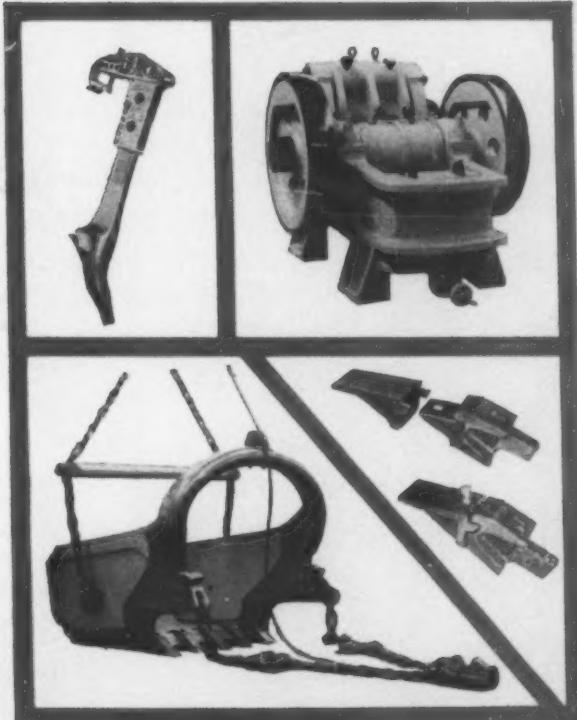
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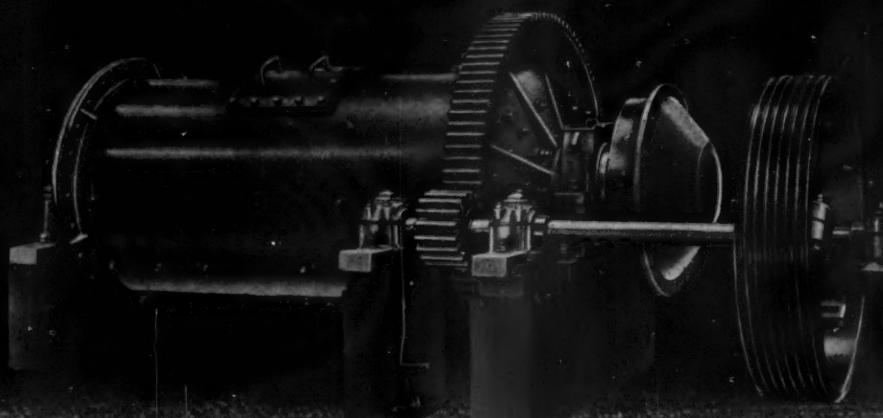
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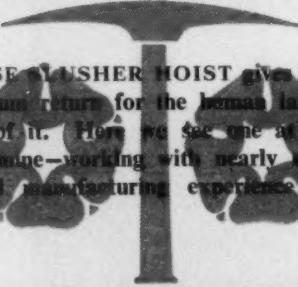
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The Mining Journal

London, December 12, 1958

In this issue . . .

The \$35 Bargain	655
Without Comment	656
Britain's Non-Ferrous Resources	657
Minerals from the Sea	657
Influence of the Home Market	658
Olympia, London—July, 1959	662
The Zletovo Lead and Zinc Mines	663
Minerals Research in Malaya	664
Machinery and Equipment	665
Mining Miscellany	666
Metals and Minerals	668
London Metal and Ore Prices	668
Mining Finance	670
Company Meetings	671
Machinery and Equipment Directory	iii

Vol. 251 No. 6434
Established 1835

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Published each Friday by

THE MINING JOURNAL LTD.

Directors
E. Baliol Scott (Chairman) U. Baliol Scott (Managing)
G. A. Baliol Scott R. A. Ellefsen

15 WILSON STREET,
LONDON, E.C.2

Telegraphic Tutwork London Telephone MONArch 2567 (3 lines)

Annual Subscription £3 Single copy ninepence

The \$35 Bargain

ALTHOUGH the year now approaching its end has failed to bring the long-awaited increase in the dollar price of gold, the record post-war rate at which the United States has been losing gold suggests that, if this trend continues, it can only be a matter of time before the hands of the authorities are forced.

As Mr. J. S. Crossley put it in his address to shareholders of Barclays Bank D.C.O., even a seemingly impregnable dollar could hardly stand up indefinitely to losses on the scale of recent months. In the first eight months of 1958, U.S. gold losses amounted to more than \$1,750,000,000. During July and August, when the seasonal pattern usually favours the dollar, the official gold stock fell by over \$300,000,000.

To quote Mr. Crossley again, it is not only the fact that the dollar appears overvalued in terms of other currencies that causes uneasiness, but that its internal value has continued to decline during a period of business recession. The gold losses are a reflection of the strain to which the dollar is subjected by these factors. Something has to give way and until they are counteracted the outflow is likely to continue.

In other words, the purchasing power of the dollar is being sapped at home by the persistent inflation that not even recession has appreciably halted. Loss of confidence in the stability of currency is indicated by a heavy increase in overseas purchases of gold for U.S. citizens, mainly in Zurich. A plan to sell gold bars on 3 per cent margin to Americans seeking a hedge against inflation was recently announced by a Canadian firm. By two minutes after 9 o'clock on the morning the offer was first made public, 4,000 oz. of gold had been sold, mainly to U.S. buyers. Abroad, there are signs that the U.S. dollar is becoming suspect at its present price.

Official and unofficial foreign holdings of dollars together totalled \$13,600,000,000 at the end of 1957, according to *International Financial Statistics* for May, 1958. This total is thought to have increased since then and at the end of September was officially estimated at \$15,000,000,000. At the same time, U.S. stocks and bonds held by foreign investors were believed to total some \$9,000,000,000.

U.S. gold holdings at the end of 1957 were \$22,900,000,000, a total which subsequent gold losses are estimated to have reduced to \$21,000,000,000 by September. The present legal requirement of 25 per cent gold backing for the Federal Reserve System would currently require a gold holding of about \$11,000,000,000 leaving \$10,000,000,000 as backing for foreign holdings of dollars, stocks and bonds now totalling perhaps 2½ times that amount.

While the U.S. gold reserves may be adequate to cover foreseeable contingencies for years to come, the fact remains that the dollar, despite its strong gold backing, has effectively been devalued to such an extent that American industry is becoming increasingly worried at the prospect of being priced out of world markets as a result of continued inflation. Whatever substance there may formerly have been in the reason officially given for keeping the

price of gold pegged at the present level, namely the need to maintain a sound currency, that argument has lost its force. Gold at \$35 an oz. has become the biggest bargain in the world.

By realistically recognizing that the value of the dollar is no longer what it was and adjusting the price of gold accordingly, the monetary authorities could retard the outward flow of gold, restore confidence in their own currency, and give a new lease of life to the U.S. gold mining industry, which through no fault of its own has been such a sadly wasted asset in recent years. A higher price of gold would also benefit South Africa, Canada, Australia, and other producing countries. In so doing, it would give Free World trade the shot in the arm which would enable it to throw off more rapidly the after-effects of the recession.

Outwardly, the idea of increasing the dollar price of gold appears to be more heavily frowned on in official quarters than ever before. Can it be that the frown is one of perplexity asks Mr. Crossley, who goes on to point out that, if a continuation of present trends were to bring this about, it need not be regarded as an unmitigated disaster. It has happened before and will no doubt happen again.

The pressure for dearer gold is unquestionably mounting and it is conceivable that there might be some foundation for the periodical rumours that Washington is weakening. At all events, the Treasury and the Federal Reserve must certainly be keeping a closer watch on the government's dwindling holdings of gold.

Objections to an increase in the gold price include the contention that it would be followed by further inflation; the view that other countries would benefit according to their holding or production of gold and not on the selective basis on which the United States has been granting dollar aid; and a reluctance to enhance the value of Russian stocks and production of gold.

As pointed out by Mr. H. C. Koch, president of the Transvaal and Orange Free State Chamber of Mines, an increase in the dollar price of gold need not have an inflationary effect or one that could not be kept within control. Such limited inflation as might occur would be incidental to the success of the measure in achieving its designed object of countering recession and restoring easier conditions.

The argument for selective aid takes insufficient account of the added capacity of the U.S. to continue with dollar aid, which would result from the upward revaluation of her own huge stocks of monetary gold.

As for the question of Russian stocks, Mr. Stefan Rundt, a foreign trade consultant, recently told the National Export Traffic League in New York that the Soviet Union had more than \$8,000,000,000 in gold and was adding to this stock at the rate of \$1,000,000,000 a year. The accuracy of this statement can only be a matter for speculation. Mr. Koch's view is that Russia's gold stocks are probably not as great as some estimates put them, and must at all events be considerably smaller than those of the U.S. In any case it seems a curious argument, as he put it, that the Western World should be denied a simple corrective to its current economic difficulties for fear that the beneficial effects would also be extended to Russia.

WITHOUT COMMENT

We give below the text of an announcement released on Wednesday of this week by Camp Bird Ltd. in connection with the recently formed Ghana Minerals Corporation.

"Ghana Minerals Corporation Ltd., a subsidiary of Camp Bird Ltd., with an authorized capital of £50,000,000, and a subscribed capital currently of £2,500,000, have sub-

mitted the following proposals to the Ghana Government, after long discussions with members of the Cabinet, including the Prime Minister, Dr. Nkrumah.

"The proposals are:—

1. The government will take steps to enter into a contract with the company that for a period of 50 years all future mineral rights in the country will be granted to the company, and for the same period of 50 years the profits of the operating subsidiaries will be divided as follows:—
 - (i) To the company to the credit of a 'New Mining Development Fund' to be retained in Ghana for new mining projects 10 per cent
 - (ii) To the company to be employed for improvement of mining workers' wages and social services during the next year 10 per cent
 - (iii) Taxation to the Ghana Government 60 per cent
 - (iv) For the shareholders of the company by way of dividends or placing to reserve or otherwise as may be decided by the company 20 per cent
2. The government will take steps to legislate that during the same period of 50 years a tax of 10 per cent of the value of their production will be imposed on all other mining enterprises in Ghana, including the operating subsidiaries of the company, to be credited to the 'New Mining Development Fund'.

3. The company will install and develop mineral processing plants with a view to selling as finished a product as possible.

4. By mutual agreement the contract to be entered into will be subject to the absolute jurisdiction of the Permanent Court of Arbitration at The Hague.

5. All arrangements will be made with the aim that the company will be managed and directed entirely by Ghanaians as soon as practicable.

"The Camp Bird proposals have been accepted in writing by the Ghana Government in principle, and when formalized will require approval by the Ghana Parliament.

"Camp Bird have subscribed £50,000 in cash to meet preliminary expenses. In addition, they have undertaken to carry out a nation-wide aerial geological survey, and Camp Bird will transfer to Ghana, on implementation of the contract with the Ghana Government, staff and aeroplanes from Canada and U.S.A., where Camp Bird aerial geological operations are now taking place. It is estimated that this aerial geological work will cost £1,000,000 within the next three years. For this and other services Camp Bird have been allotted 2,450,000 £1 shares in Ghana Minerals Corporation.

"Options have also been issued to other parties covering a further 2,500,000 £1 shares to be subscribed for in cash at par when called by the directors of Ghana Minerals Corporation.

"Ghana's present income from minerals is around £30,000,000. Thus, the potential annual income of Ghana Minerals Corporation from the proposed development tax will be in the region of £3,000,000.

"The Ghana Minerals Corporation will be responsible for the minerals side of the £250,000,000 Volta River hydro-electric cum aluminium scheme if the contract is approved by the Ghana Parliament."

Since the publication of the above statement, the text has been released of a letter addressed by the London Advisory Committee of the Ghana Chamber of Mines to Mr. John Dalgleish, chairman of Camp Bird Ltd. Dated December 10, it reads as follows:

"The Ghana Chamber of Mines has observed the report in the *Financial Times* of December 4, 1958, that summonses had been served on Ghana Minerals Corporation

Ltd., Camp Bird Bank Ltd. and Mr. Emil Savundranayagan for alleged infringement of the Companies Ordinance (Ghana).

"A notice appeared in the *Ghana Gazette* dated November 15, 1958, of the intention to strike off the register the name of Camp Bird Bank Ltd.

"In today's *Financial Times* there appears the statement that the Government of Ghana has accepted in principle the Camp Bird Group's proposal under which, *inter alia*, the existing mining companies are to be charged with a 10 per cent levy on production, which 10 per cent is to be handed over to Ghana Minerals Corporation Ltd.

"Ghana Parliament, when considering these proposals, will no doubt pay due regard to the ability of the Ghana Minerals Corporation properly to carry out the responsibilities which might then be entrusted to it.

"The Ghana Chamber of Mines wishes it to be known that neither the Chamber nor any of its members has received any intimation from the Government of Ghana of the intention to impose this levy, or even that it was being considered.

"It is difficult to reconcile the statement that the Ghana Government intends to enter into an agreement with the Corporation with the fact that charges are being brought against the Corporation for infringement of the laws.

"Furthermore, the Ghana Chamber of Mines is very concerned about the pronouncements of Mr. Emil Savundra (or Emile Savundranayagan) who claims to be speaking on behalf of the Camp Bird Group in Ghana.

"Who is Mr. Savundra, what is his past record, and what experience has he had of mining?

"An advertisement has already appeared in the *Ghana Times* stating that Ghana Minerals Corporation Ltd. have vacancies for mine managers, engineers and other senior executives, offering salaries which are up to double those currently being paid by the existing mines, such advertisement inviting applications to be made to Mr. Emil Savundra.

"The Yendi district of Northern Ghana, where it is reported the Corporation intends to mine diamonds, gold, manganese and iron, contains, according to the Chamber's information, none of these in payable quantities.

"Mr. Savundra has stated that the Corporation would arrange better accommodation, health facilities and other amenities than were now available, and that the most important part of their project would be to develop and improve all the villages adjoining their mining areas by giving them water, electricity, hospitals and sanitation at the Corporation's own cost." He is also reported to have said that the Corporation would build a complete television station for Ghana at no capital cost.

"Where are the profits coming from to service the very large capital sum involved and to provide all the amenities that Mr. Savundra promises?

"Mr. Savundra has also said that the best brains in the other mining fields were anxious to join his Corporation. Who are they?

"The Ghana Chamber of Mines submits that his statements should be either substantiated or repudiated, and that these questions should be answered.

"A copy of this letter is being released to the Press.

A Reuter's message from Accra, dated December 11, reports as follows:

"The Ghana Government last night denied agreeing to give exclusive mineral rights in Ghana to the Ghana Minerals Corporation, a subsidiary of Camp Bird Ltd.

"The Ghanaian Ministry of Information and Broadcast-

ing announcement said, 'The Ghana Government learns with great surprise that Camp Bird Ltd., of London, has been reported as having announced that the Government of Ghana has agreed in principle to give Ghana Minerals Corporation, a subsidiary of Camp Bird Ltd., exclusive mineral rights in Ghana'.

"The announcement added that no such agreement had been concluded."

BRITAIN'S NON-FERROUS RESOURCES

In his statement at the third annual general meeting of the United Kingdom Metal Mining Association on December 8, 1958, Mr. A. R. O. Williams, Chairman of the Council, recalled that in January, 1956, and again in March, 1957, the Association had written to the Chancellor of the Exchequer drawing his attention to the disabilities suffered by metal-mining enterprises in this country under the United Kingdom taxation code, and submitting proposals which, if adopted, would remove, or at least alleviate, some of these disabilities and provide encouragement for the exploration and development of our metallic ores.

He went on to state that during the year covered by the annual report, the Council had under consideration the making of a further approach to the Government, but felt that, in view of the symposium which the Association and the Institution of Mining and Metallurgy were together arranging on "The Future of Non-Ferrous Mining in Great Britain and Ireland", this question could best be deferred until the symposium had been held and the most up-to-date facts concerning the metal-mining potentialities of this country, together with the opinions of the experts taking part in the symposium, were available for laying before the Government. The symposium took place on September 23 and 24, and was devoted to the presentation and discussion of twenty-four papers covering every aspect of the subject (*vide The Mining Journal*, September 26, 1958, page 327).

In order that the significance of the wealth of facts and opinions expressed in the course of the symposium could be fully appreciated, the Council decided to obtain expert advice. They have accordingly asked Dr. K. C. Dunham, F.R.S., who holds the Chair of Geology at Durham University and is one of the leading mining geologists in this country, to study the proceedings of the symposium with a view to assessing the potentialities of this country as a source of metallic ores, and to advise on the practical steps that should be taken to prospect for and to develop such deposits, and to indicate whether any of these steps, such as, for example, aerial photography, geological mapping, geophysical and geochemical work, structural drilling, etc., are ones which the Government could be reasonably expected to undertake. This Dr. Dunham has consented to do. On receipt of his report, said Mr. Williams, the Council would be in a position to decide the form in which a further approach to the Government could best be made.

MINERALS FROM THE SEA

Dr. Hugh Odishaw, a leading American scientist, recently has reported that a vast mineral-rich region in the Pacific had been discovered during an I.G.Y. study of ocean floors. "Millions of square miles of the bed of the south-east Pacific bear a sludge laden with nodules of manganese and iron with up to 1 per cent of cobalt mixed with copper," he declared. "The value of these minerals is estimated at about \$500,000 per square mile, and the economies of dredging up the sludge appear promising."

BRITAIN'S MINING MACHINERY EXPORTS—II.

Influence of the Home Market

ASUBSTANTIAL growth must be anticipated in the mining industries of the underdeveloped areas of the world over the next ten, let alone the next twenty, years. There are two main influences working in this direction.

First, there is the strong probability that the world's appetite for practically every commercially useful metal will continue to expand over the next twenty years more rapidly even than in the last twenty. Upward population trends and growing wealth *per capita* in the backward areas of the world, no less than in the highly industrialized countries, are both virtual certainties, which only some major cataclysm of war seems likely to arrest.

Secondly, two of the major industrialized areas of the world, the United States and Western Europe, are becoming increasingly dependent on imports for the majority of minerals—mainly from the underdeveloped areas.

It is thus to be expected that much of the financial aid to the underdeveloped areas (aid supplied alike by West and East—often from primarily political motives) will be spent by the receiving country on the development of its mineral resources, which for an unindustrialized country is likely to be the most immediately available form of export next to agricultural products.

Governments Dare Not Stand Aside

Wherever the political and fiscal climate is suitable, private enterprise may, of course, be relied upon to play a major part in the development of mining. It must, however, be recognized that the political and fiscal conditions in some of the newly autonomous states, which have come into existence in Africa and Asia since World War II, often in themselves appear to present a high degree of risk which, added to the high risk inherent in any mining enterprise, tends to make these areas unattractive to the private and institutional investor. Indeed, it is partly because investment in such territories has often been so patently an unattractive commercial risk that the various foreign aid programmes characteristic of the past decade have come into being. In such cases, the taxpayer has been performing the function which the private investor was ready

The Reason for

- This series of articles has been written in the belief:
- (1) That the world's requirements of metals and minerals will continue to increase at an accelerating pace;
 - (2) That progressively more and more of these requirements will have to come from the less developed areas of the world;
 - (3) That, as in the past, the development of a virile mining industry will continue to provide the springboard for the wider industrialization of many underdeveloped countries;
 - (4) That it is vital to Britain's survival as a major industrial area that she should safeguard her sources of minerals supply by participating in the development of these "new" mining areas;
 - (5) That it is equally vital to the maintenance of Britain's political and moral influence in both the newly autonomous countries and in those still aspiring to self-determination, that she should aid their governments to the maximum of her capacity not merely by financial aid but equally by making available, on terms which will ensure their acceptance, British technical consultancy

enough to perform in the era of Imperial and Colonial rule, when the sanctity of commercial contracts was unwritten, be it from London, Brussels, Paris, or elsewhere. Whether we like it or not, it follows that government financing, or government supervision of the financing, of the new countries has become, and will remain, a major trading influence, and one which will, moreover, be directed by predominantly political considerations.

By whatever means the capital is forthcoming, the fact remains that these underdeveloped countries are entirely dependent on the major powers for the finance and industrial skills without which their economic progress is impossible. Conversely, the major powers will become increasingly dependent on the underdeveloped areas of the world for the raw materials to feed their industries, just as the continued growth of the capital goods industries in the older countries must increasingly come to depend on raising the standard of living of hundreds of millions as yet below any standard with which we in Britain are even remotely familiar.

Aside from the obvious community of interest between the highly developed and the underdeveloped countries of the world, we are further plagued by the struggle between the Western powers and the Communist *bloc* for political ascendancy in these underdeveloped and often as yet politically uncommitted territories. Thus it is now no longer self-interest alone which prompts one or other of the Western countries to finance the economic development of a backward area. Mutual advantage apart, there is the knowledge that political pressures, like nature, abhor a vacuum, and that if Western aid and influence are not dominant in such territories, then assuredly Communist influence will be.

The Manufacturer Must Play His Part

Readers of this journal are familiar enough with the realities of these problems as they find expression in the mining industry around the world. They may, however, be less familiar with the equally real problems confronting the mining machinery manufacturer, who has a part to play hardly less important than that of the miner in bidding for

These Articles

- aid and subsequently British capital goods and other industrial equipment necessary to the fulfilment of their development projects;
- (6) That the British mining machinery manufacturer, whose reputation abroad for product quality and commercial integrity has always been high, is now—in many cases for the first time since World War II—in a position to sell competitively in these "new" export markets in respect of prompt delivery and adequate spares in consequence of the shrinkage in N.C.B. purchasing and the changing pattern of trade in the industry's "traditional" export markets;
 - (7) That in certain other respects the industry's competitive position in the "new" markets is as yet less assured, but that its continued prosperity depends on its securing a major share of these large prospective markets;
 - (8) That while the British mining machinery manufacturer must rely primarily on his own inventiveness and initiative in establishing himself in these "new" markets, nevertheless he requires, and has a right to expect, a much more positive and flexible approach to his problems from all government departments.

the industrial and political leadership of the West in these underdeveloped and often newly autonomous countries. Financial aid is an essential preliminary in these matters, but its political and social impact diminishes in direct proportion to the rate at which it is spent, whereas it is the conversion of financial aid into systems of communication, into mines, and into secondary industries, which has a lasting political and social impact on a new country and which shapes the pattern of its development.

A vast amount of mining machinery and equipment is going to be needed to open up the mining areas in these "new" countries, the bulk of which is going to have to be imported for many years to come. It is thus highly pertinent, in the national interest no less than in that of our manufacturers, to consider to what extent these requirements will be supplied from Britain.

It is obviously vital that British mining know-how and engineering skill should be introduced into these "new" countries, at least on a scale commensurate with the amount of British capital which, directly or indirectly, is being made available. The indications are that hitherto this has not been happening. Some of the principal reasons why were discussed at length in the first article in this series, entitled "Mobilizing the British Mining Consultant" (*Mining Journal*, October 17, page 413), and in the leading note in that same issue headed "Does Trade Follow the Aid?" (page 411). Other reasons will become apparent in this and subsequent articles.

These Markets Are Highly Competitive

It is as well that we should be clear at the outset that these "new" markets are, and seem certain to remain, highly competitive. American, German, and to a lesser extent Japanese, manufacturers are now most aggressively on the hunt for export business with all the *élan* born of highly competitive and individual home mining markets and with considerably more practical assistance from their governments than is the common experience of the British manufacturer. At the same time, the Russians also stand ready to intervene with financial and technical aid wherever they deem it politically expedient.

Competition in these "new" markets—as indeed in all markets—is dependent in greater or less degree on five principal sales factors. The circumstances of Britain's mining machinery industry varies greatly from firm to firm and from one export market to another in respect of these various elements, which we shall be examining in the course of these articles:

1. Established reputation both of the product and the manufacturer.
2. Delivery dates and spares availabilities.
3. An imaginative and dynamic design department to adapt existing products to new markets and to design the new product which can turn a declining market into one with a new potential.
4. The cost at which it is profitable to sell on normal commercial considerations.
5. Artificial political and economic barriers to normal trade.

Reputation, that is to say good reputation, is built up on a combination of these factors. Moreover, the building up of a good reputation takes time, as does the shedding of a bad one. Happily, the reputation of British engineering, both in respect of product quality and business integrity, has generally been high, and on these considerations at least there will always be an inclination abroad to buy British.

On the other hand, the post-war record of the British

mining machinery manufacturer on export deliveries has not been altogether satisfactory. For a large section of the industry, the seemingly inexhaustible demands of the National Coal Board have been a major factor in this situation, but today the industry is better placed than at any time since the war to establish and maintain a competitive delivery and spares position, partly in consequence of a contraction—possibly permanent—in the home market and partly by virtue of changing market conditions in the "traditional" export markets—broadly, that is to say, those of the older Commonwealth and Colonial territories—the prospects for which will be considered in a later article.

Two Markets or One?

In much of what we shall be saying it will be necessary to distinguish between those manufacturers who hitherto have supplied the bulk, or even the whole, of their output to the N.C.B. and those manufacturers of products designed primarily or exclusively for the metal mining industry, who have always had to look overseas for their markets and whose problems have remained unaffected by the vicissitudes of N.C.B. policy. What follows in this article only concerns the former. In later articles, we shall be examining the export problems of common interest to all.

Manufacturers who have hitherto sold principally to the home coal industry will, as they come to study export markets more closely, no doubt draw encouragement from the realization that, except as regards equipment connected with the actual process of coal winning and with certain aspects of coal preparation and mineral dressing, mining machinery for export has in a high degree a dual application both to coal and metal mining. Indeed, Britain is perhaps the only country in the world where a hard dividing line still persists between engineers trained for the coal mining industry and those trained for metal mining. In Germany, in the United States, and pretty nearly everywhere else, the interdependence of technical progress in coal and metal mining is recognized, and in consequence there is perhaps a greater readiness among manufacturers to serve both sections of the industry alike.

The significance of this lies in the fact that outside of Western Europe, the metal mining industry contributes the larger part of all expenditure on mining machinery. Moreover, where the requirements of hard-rock mining differ from coal, as, for example, in generally lower standards of flame proofing or greater problems of abrasion in handling, these will generally prove to be differences of degree which, given adequate redesign and product development facilities, will be well within the capacity of the manufacturer to meet with his existing experience and factory resources.

The Future of the Home Market

The home market, which for the past ten years has virtually been that provided by the N.C.B., has in the past played so predominant a role in the fortunes of many mining machinery manufacturers that the future level of demand from this source, and the relationship of the seller to the buyer, cannot avoid being major factors in the export picture. Thus it is vital to the manufacturer that he be able to make an assessment of what this market is likely to be able to offer him in the future before reconsidering his approach to exports.

The fact that N.C.B. buying has in the course of this year virtually dried up, while momentarily highly embarrassing to the manufacturer, is in the long term sympto-

matic of a major change in the coal industry rather than significant in itself. Over the past year or more, it has been abundantly clear that the N.C.B. was passing—certainly for a long time, perhaps for ever—from a phase of having to maximize O.M.S. almost regardless of cost into one of having to maximize profit per ton in the face of the hard realities of selling against substitute fuels in a competitive market.

If the N.C.B. is to adapt itself successfully to this changed situation, it will need, among other things, to impose a much stricter control on stock levels throughout its organization. It will also need ruthlessly to insist on a much longer working life for machinery and equipment through better maintenance, and the quicker recovery and repair of unserviceable items. It will also have to insist on a higher level of machine utilization while in service. The lesson must now at last be learnt that every machine standing idle in the pit, in the workshop, or even held in reserve, is adding to the hourly cost of the machines actually in use, even perhaps to the extent of completely invalidating in some pits the cost calculations which originally justified the use of that particular machine.

Centralized Buying

The N.C.B. has only begun to go through the mental revolution which the switch in emphasis from O.M.S. to profit per ton implies. At the same time, the swing back towards centralized buying, which as yet, in the experience of most manufacturers, is only at the fact-finding and programming stage, is itself far more indicative of this change of outlook than it is of any revolutionary change which may be expected in the day-to-day relationship between the manufacturer and the mines at area level.

Obviously, in an organization which is purchasing at the rate of £150,000,000 or more a year, there is considerable scope for economies in bulk buying of consumable items. Centralized buying is also likely to be an important factor in preventing a recurrence of overstocking, just as standardization of general stores can make an important contribution to this.

Whether it is the Board's intention that centralized buying should be extended to the more specialized items of mining machinery is by no means clear. Some manufacturers are undoubtedly apprehensive that this may be so, just as they fear that such a step might be the prelude to a reduction in the number of types of machine in use. On this latter point, however, they may well have been too concerned about the possible restrictions on freedom of choice at area level which centralized buying might impose, while giving too little thought to the plain fact that no amount of centralized buying will avail unless the buyers buy what the areas are ready to use willingly. To impose from headquarters the use in a particular area of a particular piece of machinery or equipment, which may be locally unpopular or unsuitable, is no way to ensure efficient utilization.

Bad News is Better Than No News

Meanwhile purchasing—such as it is—continues to be carried out at area level, and the central purchasing organization appears so far to have been far more concerned with endeavouring to ascertain what future requirements may be, and—presumably—to consider how best to mitigate the hardships which the present hold-up in buying is creating for the manufacturer. Certainly any N.C.B. re-organization which will result in the Board being able to give manufacturers a firm programme to work to will be generally welcomed. Even bad news is better than no

news, and a particularly unfortunate aspect of the Board's withdrawal from the market this year has been that manufacturers have been unable to get any indication as to the duration of the hold-up in buying.

If for the moment it is Board policy to "make do and mend", all well and good. But at least manufacturers should be given some indication of the extent to which the running down of stocks, the closing of uneconomic pits, and the more efficient operation of those that remain, will enable the N.C.B. to defer the resumption of purchasing for various categories of machinery. Equally, manufacturers should be told the rate at which it is intended to open up new pits and what is now to be the policy on modernization. It may be argued that in recent months N.C.B. policy has been in such a state of indecision that no purchasing programme could be worked out. If so, manufacturers may perhaps hope for better things following last week's statement in the Commons on next year's level of coal production (*The Mining Journal*, December 5, page 628).

As, whatever happens, the N.C.B. is destined to remain a major buyer of mining machinery, we cannot emphasize too strongly the importance of the Board keeping the manufacturer informed as far as possible regarding probable future requirements. If it is accepted that the continued prosperity of the British mining machinery manufacturer depends on his establishing himself as a reliable exporter, he must be able to quote firm delivery dates, and keep them. This may for the moment be all too painfully easy to do, but, once the N.C.B. is back in the market, it is imperative that home purchasing requirements should be known ahead with precision. In the absence of any official pronouncement, what can be said of the outlook?

What is the Outlook?

None perhaps know better than the machinery manufacturers the extent to which a resolute and united attack on sources of waste and inefficiency can enable the N.C.B. to continue to defer new purchases. Obviously the interval before buying is resumed will vary from item to item according to the amount of slack which can be taken up in inventories, idle machine time, and the recovery of unserviceable equipment. Also to a small extent by what can be recovered from the pits which are to be closed next year. However, the N.C.B. has to continue to mine some 200,000,000 tons of coal a year, and when it recommences buying, it will again be a very substantial purchaser by any standard.

In considering the levels at which purchasing may eventually be resumed, it is necessary to consider the N.C.B.'s programme in three distinct parts:

1. The demand for consumable and semi-consumable items for pits in current production.
2. The demand for capital equipment for new pits.
3. The demand for additional machinery for the modernization of existing pits.

Consumable and semi-consumable items: These may be said to include any item with a relatively short working life, whether for accounting purposes it may be regarded as a capital item or not. Products in this category may be expected to settle down at a purchasing rate corresponding closely to consumption requirements at the current level of production, less—let it be hoped—a gradually rising economy factor as utilization, maintenance, and salvage standards are improved.

Future purchasing levels will also vary in comparison with the level, say, of the three years prior to April, 1958, according to the extent to which stocks were actually accumulating during that time. If production is to remain

at around 200,000,000 tons, it would therefore not seem unrealistic to expect future buying levels in this category to settle down at from 15 to 25 per cent below the average for the last three completed accounting years.

Capital equipment for new pits: With forty-eight pits closing down next year, and the obvious large potential for higher O.M.S. in the other 900 or so (where the livelihood of both management and labour may now literally depend on it being achieved), it might well at first sight be asked whether the N.C.B. will not drastically retard the opening of new pits. The tone of last week's coal debate in the Commons suggests, however, that this is unlikely—at least to the extent that lower production costs at the new pits promise to enable the Board to close down a further batch of sub-marginal producers.

We must, of course, be ready for some disappointments on this score, as some of the new pits are costing far more to bring into production than was originally planned, but even in these cases, once a start has been made, the longer it takes to bring a pit into production the greater in all probability is the eventual cost, and certainly the greater is the amount of non-productive capital tied up in the industry.

It is, therefore, difficult to see that the Board has any alternative but to push on steadily with the programme for new pits.

Machinery for the modernization programme: Obviously in the circumstances of today mechanization under this head can only be justified where it demonstrably effects a reduction in overall cost per ton sold. Once profit per ton replaces O.M.S. as the criterion for mechanization, there ceases to be any purpose in the introduction of a new machine at the face, even if it does result in a reduction in cutting and loading costs, if at the same time this saving is offset by higher haulage, hoisting, and cleaning costs, or reduces the marketability or selling price of the coal.

Moreover, if—and even now this may still be wishful thinking—the miner can be inspired to work harder on an unmechanized face in defence of his job, this in itself will mean that the increased efficiency required to justify mechanization will be all the greater.

In any event, mechanization is not an absolute concept. There are many degrees of semi-mechanization and, with the excess labour force now available, it is probable that the emphasis on mechanization will be on mechanical aids—such, for example, as well-tried and easily-operated coal cutters and scraper loaders—calling for a capitalization of perhaps £15,000 per face, rather than on some of the all-out mechanization schemes costing perhaps up to three times this amount and requiring a far higher standard of planning and supervision.

We would, therefore, expect to see the capital expenditure on modernization projects sharply cut back, although it by no means follows that the less costly and more easily operated and serviced machines will suffer in proportion—indeed, some items might well benefit by the change of policy.

Prices

Manufacturers are undoubtedly apprehensive, probably not without reason, that now that the N.C.B. will be in a position to cut down on its rate of future purchasing, it may be in a better position to squeeze profit margins. Centralized buying may facilitate such a process, but it would be surprising if, in its present embarrassed situation, the Board would not in any case take advantage of its strong tactical position to bring about a reduction in prices where possible.

With an industry buying on the huge scale of the N.C.B., it would be surprising if it were not purchasing some items on which the manufacturer had been enjoying a profit margin which could stand some reduction. On the other hand, for the Board to force down prices indiscriminately would be extremely shortsighted. In any case, it is too early yet to judge whether the new central purchasing organization will, in fact, wield the big stick, or whether its approach will be one of inviting manufacturers' collaboration in working out more economical manufacturing programmes and sub-contracting arrangements.

Whatever policy is adopted at Hobart House, the inescapable necessity remains of keeping the established mining machinery manufacturers in a position to continue to operate efficiently, and if central purchasing does nothing else, it should at least enable the Board to have a clearer overall picture of this problem. Over the past year or so, there have been stories of tenders being put out at area level to firms not normally associated with the manufacture of mining machinery. In so far as this has been happening, it is something which central buying might reasonably be expected to stop.

On the reduced level of purchasing, which must now be expected, there should be more than enough experienced manufacturers in the field for the N.C.B. to obtain competitive tenders without having to turn to manufacturers unfamiliar with the industry, who may themselves be temporarily on short time. Moreover, the Board is a powerful enough buyer to be able to exert the leverage necessary to bring down excessive prices without recourse to tactics of this sort.

There is, of course, everything to be gained by encouraging the permanent entry into the mining machinery industry of a new manufacturer who has a useful technological contribution to make, but with this reservation the Board will be wise to foster the established manufacturers in bad times as in good.

The Influence of N.C.B. Policy on Design

Quite apart from the prospect of a shrinkage in the N.C.B. market, certain of the more progressive manufacturers have been seeking to extend their mining machinery markets away from the influence of the N.C.B. on strictly technical grounds, because they fear that the gradual extension of standardization may be accelerated by the return to centralized programming and buying.

As will be appreciated from our earlier remarks on the necessity of Hobart House buying what the areas will use willingly, it remains to be seen how far the changes in buying organization will, in fact, accelerate the rate at which standardization will proceed on machinery embodying a high degree of original design. If they do, and some manufacturers are undoubtedly apprehensive on this score, it must tend to put the brake on technical progress, more especially in so far as standardization is extended to matters of engineering design and materials, as distinct from standards of safety, performance, and dimension.

We do not wish to make too much of the extent to which technical progress on machinery suitable for British pits will necessarily make the manufacturer more competitive overseas. Quite a lot of equipment used in British pits, more especially on the electrical side, is just not saleable in many Continental and American markets because of differing standards. On the other hand, the more rigid that British standards become, and the more that they depart from standards in other markets, the more ground the British manufacturer has to make up when he turns to redesigning his product for the export market.

It is not so much that standardization is itself stultifying, it is rather the changed attitude of mind which comes with wholesale standardization in a large industry. From the point of view of the N.C.B., it could result in a greater disinclination to encourage manufacturers to pursue original lines of research and experiment. From the point of view of the manufacturer, there must be reluctance to spend money on product development for a market which may become resistant to change. Moreover, there is a natural inclination, when manufacturing on a large scale to the strict standards of an industry in the home market, to become lazy-minded about standards in other countries which may be intrinsically as good though different.

It would be easy to exaggerate the number of manufacturers who are being influenced by these considerations into product diversification aimed at deliberately reducing their dependence on the home market. Nevertheless, this factor does operate, and in its incidence will tend to divert to other markets the research and development efforts of the more creative technologists and managements in the industry.

It All Adds Up to Diversification

However we may speculate on these various possibilities, four conclusions stand out clearly. In the first place boom times for the sale of coal-mining machinery in the British market on the scale of recent years are over—perhaps for good. Secondly, no one, buyer or seller alike, has any clear idea as to how long the N.C.B.'s present suspension of buying will last or at what level it is likely to be resumed. Thirdly, for the many items of machinery and equipment, of which in the past the N.C.B. has in effect been prepared to accept all that was available, manufacturers must in the nature of things now be prepared for the Board to exercise its very considerable leverage as a major purchaser in what is now a buyer's market to reduce prices wherever circumstances will allow. Fourthly, there is a fear among some, although by no means all, manufacturers that there is a real danger that centralized programming and buying may give such an impetus to standardization as to undermine the vigour of the manufacturers' research and development departments; or alternatively, to cause the whole cost of these departments to become a charge against export sales.

Thus in their various ways these conclusions are stimulating those manufacturers already selling overseas to place increased emphasis on, and achieve a higher proportion of, export sales; while the minority of manufacturers who have hitherto sold exclusively to the home market, now seek to diversify by developing sales overseas.

In the past, some manufacturers have tended to be obsessed by the magnitude of the N.C.B. as a customer, and in addition, the profit margin in the home market has not infrequently been higher than on export business. Moreover, the Board has no doubt on occasion not hesitated to point to a manufacturer's export trade as the cause of any delays in delivery to the home market. Consequently, until recently some manufacturers have, in effect, felt able to do little more than seek export outlets for whatever surplus production they could anticipate after meeting N.C.B. requirements. This has consequently meant that often the manufacturer has had no long-term export and sales plan for his existing products, nor any market survey and product development programme to ensure his long-term competitive position overseas.

It is easy enough to be right after the event and to say that exports should have been given a higher priority, more especially in the last two or three years, when subcontracting facilities were such as to give production pro-

grammes greater flexibility. The fact remains that only the more forward-looking of the coal-mining machinery manufacturers began some years ago to hedge into new export markets as a matter of policy or to diversify in some other way at the expense of sales to the N.C.B.

Export selling, especially for the smaller manufacturer who may be new to it, is in these days certainly no easy way to earn a living. Nevertheless, now that the industry is at last in a position to give top priority to export deliveries, the reputation and accumulated mining experience which the established British manufacturer commands should find a ready response among miners in those under-developed areas of the world which must constitute a growing proportion of Britain's future mining machinery markets.

[In the next article in this series, we shall endeavour to examine the changing pattern of trade in the industry's "traditional" export markets and the structure of the industry's export sales organization.]

Olympia, London—July, 1959

TWO notable events in next year's mining calendar are planned to take place concurrently in London at Olympia in July. The Institution of Mining Engineers is holding an International Symposium on Shaft Sinking and Tunnelling on July 15 to 17 coincident with the Mining Machinery Exhibition which is being organized by the Council of Underground Machinery Manufacturers from July 9 to 18.

Our observations elsewhere in this issue on the subject of Britain's mining machinery exports underline the timeliness of this Exhibition, and as might be expected the organizers are making every endeavour to ensure that attendance at the Exhibition will be as widely international as possible. It is certainly a sign of the times that both the C.U.M.M. and the I.M.E., organizations which hitherto have been primarily identified with the British coal-mining industry, should now each be sponsoring an international gathering concerned alike with coal and metal mining.

The organizers of the Exhibition have, very understandably, emphasized the part which it must play as an export shop window for Britain's mining machinery industry. In an export context, particular interest also attaches to the I.M.E.'s Symposium by virtue of the recognition, implicit in the selection of papers to be discussed, of the close interdependence of technical progress in coal and metal mining practice—a recognition which has in the past appeared less apparent among British mining engineers than elsewhere. It goes without saying that this initiative by the I.M.E. is one which must be welcomed by the Institution of Mining and Metallurgy, although we understand that the I.M.M. is not itself concerned with the arrangements for the Symposium.

We tabulate on page 667 the list of papers to be presented at the Symposium together with the list of participants in the Exhibition, about which further details will be available shortly. Considerations of space have necessarily limited the number of invitations which could be extended to members of associations other than the C.U.M.M. It is, nevertheless, anticipated that the Exhibition will contain examples of British engineering skill as applied to every phase of underground mining. The extent to which machinery for opencast operations and coal or mineral processing will be represented has yet to be clarified.

The Zletovo Lead and Zinc Mines

By Branko Djukic

ZLETOVO Mines, Yugoslavia's second largest producer of lead and zinc, recently celebrated the thirtieth anniversary of its existence as a modern mining property.

These well-known mines are situated near Stip, one of the largest towns in East Macedonia, in a district which has long been renowned for its rich ore deposits. The Zletovo ores were exploited as long ago as the Middle Ages, but the more extensive mining operations of the present day are of quite recent origin.

It was in September, 1928, that the British company, Selection Trust, first started the systematic investigations which led, in 1935, to the start of preparations for opening the mines. On November 6, 1929, the concessions owned by Selection Trust were transferred to a newly formed company known as Zletovo Mines Ltd. In the middle of August, 1938, the latter company was merged with Trepca Mines Ltd., to which all the concessions were transferred.

The erection of mine buildings and assembly of plant were begun in 1937. Construction, stope preparations, milling tests, etc., were completed in 1939, provision being made for an annual production of 120,000 tonnes of ore. Owing to low metal prices, however, the property was placed on a care and maintenance basis and was never put into production until the Germans took it over during World War II.

While in occupation of Yugoslavia, the Germans worked the Zletovo mines, production being started in September, 1941. Due to sabotage by Yugoslav miners and technical

staff, output fell far below the target set by the occupiers. During the period 1941-1944, it amounted only to 130,625 tonnes of lead-zinc ore, averaging about 12 per cent of lead, from which 18,993 tonnes of lead concentrates were produced.

After the war, development of the mines was accelerated. Plant that had been destroyed was replaced, damaged equipment repaired, further exploration undertaken. Production was stepped up by the introduction of mechanization, the installation of additional plant and equipment, and an increase in the number of workers employed. From 23,051 tonnes in 1945 the output of lead-zinc ore was raised to treble that figure in 1949 and last year's production amounted to more than four times the total for 1945. Meanwhile productivity was also being improved, being over 30 per cent greater last year than in 1945.

Excellent results are reported from the flotation process, which is now being used for the treatment of three times as much ore as in 1945. In addition to the production of lead concentrates, the flotation of zinc was started in 1948, when 700 tonnes of zinc concentrates were produced. Last year the output of zinc concentrate amounted to about $4\frac{1}{2}$ times this amount.

The outlook for the Zletovo mines is regarded as very favourable. Proved reserves are sufficient to support the present level of production for almost 15 years, while indicated and inferred reserves in the surrounding district are considerably greater.



INVESTIGATIONS by the Department of Mines Research Division are the subject of four bulletins recently issued by the Ministry of Natural Resources, Federation of Malaya.

Ilmenite from Alluvial Deposits

The alluvial deposits of tin-ore in Malaya contain a variety of heavy minerals in addition to cassiterite. In the course of mining these deposits the practice is to make a rough concentrate of the valuable minerals; this is sent to a "tin-shed" (treatment plant), where the cassiterite is separated as a marketable product. The reject from the tin-shed is referred to as *amang*. It consists chiefly of ilmenite, but also contains a considerable number of other minerals.

The rise in demand for titania (TiO_2) as a paint-pigment and, consequently for ilmenite, which is the source of titania for this purpose, has led in Malaya to the production for export of ilmenite from *amang*. The material exported is analysed before shipment and it has transpired that, while most of it has a TiO_2 content of between 52 and 54 per cent (corresponding approximately to the theoretical TiO_2 content of ilmenite), in some cases values of between 60 and 65 per cent TiO_2 are recorded.

Malaya), price \$M2.50. The report describes some of the minerals in which tantalum and niobium occur in Malaya and also gives an indication of the possibility or otherwise of making concentrates from sources other than those which produce the known columbite/cassiterite association.

Stannite

Several occurrences of lode tin ore of the sulphide-rich type occurring in limestone or at granite-limestone contacts have been worked at various times in Malaya. In a few cases, such as the Lahat pipe or the Beatrice Mine, near Ipoh, Perak, extremely high recoveries of tin concentrate have been obtained, but in many other cases the preponderance of sulphides has proved too much of a technical handicap to the operators and working has had to be abandoned.

Recoveries of tin concentrate have usually been particularly good in the oxidized zone where cassiterite is associated with iron oxides derived from the breakdown of the sulphides; introduction of flotation has made it easier to treat sulphide-rich material with a high recovery of the cassiterite. Flotation is particularly satisfactory for treating the usual cassiterite-arsenopyrite-pyrite mixture but, with ore from the more complex sulphide zones, recovery may be disappointingly low.

Minerals Research in Malaya

Petrological examination of the high-grade material by the Geological Survey of Malaya indicated that it contained, in addition to ilmenite, another constituent with a higher content of titania, to which the name "var. rutile" was tentatively given.

Mineragraphic examination of polished sections of the material revealed, however, that this constituent was, in reality, ilmenite which had undergone alteration, the alteration product probably being a mixture of sub-microscopic hydrated rutile and non-crystalline iron oxide.

This investigation is the subject of a report by the Senior Research Officer, H. W. Hockin, which has been issued as Bulletin No. 1 (*Ilmenite from Alluvial Deposits in Malaya*), price \$M2.00.

Tantalum/Niobium Minerals

The demand for concentrates containing tantalum and niobium aroused considerable interest in Malaya, where columbite is known to occur in important quantities associated with cassiterite in alluvial and eluvial deposits at Bakri in Johore and Semiling in Kedah. The high price paid at one stage for concentrates led to an intensified search for the ores of these metals, with the result that numerous samples of widespread origin were submitted to the Department of Mines for examination.

Many of these samples contained small amounts of tantalum and niobium minerals, but, as examination proceeded, it became obvious that the problems of identification and interpretation of the textures shown by the individual mineral grains were so closely associated with the problems of concentration, that for all practical purposes the mineralogical and metallurgical aspects could not be discussed separately.

The work so far carried out is summarized by H. W. Hockin in Bulletin No. 2 (*Tantalum/Niobium Minerals in*

Little interest seems to have been taken in these complex sulphide bodies as sources of cassiterite, but Hockin has examined one occurrence of stannite associated with cassiterite that is notable as an example of the complex intergrowth of sulphides. The paragenesis of these ores has not been investigated, but the investigator was struck with the similarity they seemed to display to the "telescoped" cassiterite deposits of certain mineral provinces in Australia and Bolivia. This work is reviewed in Bulletin No. 3 (*A Note on an Occurrence of Stannite in Malaya*), price \$M1.50.

Removal of Sulphides from Tin Ores

Sulphides are among the most troublesome of the variety of minerals associated with cassiterite in the alluvial deposits of tin ore in Malaya. They are particularly common when the alluvium is associated with schist or shale. They also occur in relatively massive form in the so-called "contact zones" where a granite has intruded into the older limestone formations, the contact between the two often being highly mineralized.

By normal gravity-concentration methods which, in Malaya, culminate in a hand-dressing operation, small amounts of pyrite can generally be removed, but a middling product, rich in sulphides and cassiterite, tends to build up and defy any further attempt at dressing by gravity methods. Arsenopyrite is even more troublesome. The tin smelters impose penalties for arsenic content in tin concentrates; hence as complete an elimination as possible of this mineral is desirable.

The sulphides encountered in Malaya are described by H. W. Hockin and J. H. Harris in Bulletin No. 4 (*Flotation Methods for the Removal of Sulphides from Tin Ores in Malaya*), price \$M1.50. Methods used for their removal from tin concentrates are reviewed. The flotation process is considered the most effective.

Machinery and Equipment

Earth Moving By Dredger

A departure from the conventional method of earth moving is to be seen at Westfield Open Cast Site, described in our issue of October 31, 1958, where Richard Costain are removing overburden by suction dredger. This is the first time such a method has been used in this country. The site is at Kinglassie, Fifeshire, and the excavation area of about 135 acres contains a layer of peat underlain by sand to a maximum depth of 40 ft. Dredged material is deposited in an area enclosed by embankments previously constructed. The contract is being carried out in conjunction with Blankevoort and Zoon, of Bloemendaal, Holland.

Originally constructed in Holland, but working latterly in Belgium, the dredger Vlaanderen XI, which weighs 550 tons, is believed to be the largest of the sectional cutter type dredgers in Europe. The length of the dredger is 143 ft. with a beam of 23 ft. and draught of 6 ft. Oil storage pontoons fixed to the sides bring the total width to 39 ft. The cutter ladder mounted on the bow is 71 ft. long, and at the end of it is a 7½-ft. dia. cutter, which covers the mouth of the suction pipe.

Erection of the dredger was carried out by a 48-ton gantry with four electric hoist motors, which offloaded the lorries from an access road at one end of a dry dock and transported the pieces to their appropriate positions. At the end of August, 1957, the Vlaanderen XI dredged its way out of the dock.

The dredger has no propulsive machinery but is held in position by dropping down to the bottom of the excavation one of two vertical spuds at the stern. Two head ropes running through sheaves at the end of the cutter ladder are attached to port and starboard anchors

placed some distance from the dredger on land. By winching in and out these two head ropes the dredger can be slewed about the fixing studs and can be advanced by dropping alternate spuds.

Power for the cutter and winch motors which raise and lower the cutter ladder and spuds and operate the anchor ropes, is supplied by two diesel-electric generators on board which supply a total 450 kW.

The suction pipe is situated within the cutter so that material broken by the cutter is immediately drawn into the suction pipe, which carries it to two 7½-ft. dia. pumps each driven by 1,520 h.p. motors. The pumps deliver an average of 20,700 gals. per min. of a mixture of water and solids at a total head of 70 ft. over a mile of 26-in. delivery pipe. The pumped material is discharged at the stern of the dredger through a swivel end to which is connected the delivery pipeline.

In operation the dredger has first to cut a face down to the sand layer. This is done by starting at the top of the material to be excavated, and moving the dredger slowly in an arc, backwards and forwards, by pulling in turn the port and starboard ropes. The cutter is lowered as the material is excavated. The material is often undercut, and falls down on the cutter, where it is broken and drawn into the suction pipe. As the face is worked out the dredger is advanced by slewling on alternate spuds.

The material is conveyed by pipeline to storage embankments which are

divided into two compartments with a total storage capacity of about 3,800,000 cu. yds. The mixture settles in the area and the water is drawn off by flumes constructed on the inside of both compartments. The water entering these flumes, which are connected to 4-ft. dia. pipes placed underneath the 50-ft. high embankments, is controlled by timbers across them so that only water from which the suspended solids have settled out is returned to the excavation area.

Smaller embankments 17 ft. high, which were later built on top of the existing ones by the contractor, increased the storage capacity to approximately 5,300,000 cu. yds.

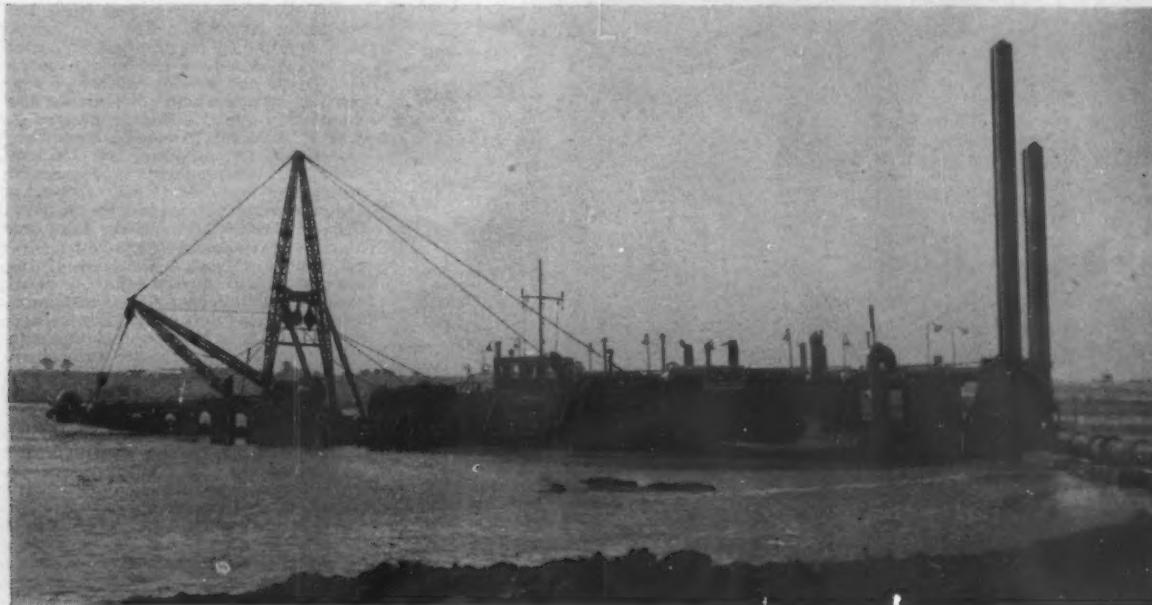
The dredger is capable of handling an average of 900 cu. yds. per hour of solids. During continuous working, except for week-ends, the output of the dredger was 4,382,000 cu. yds., in 49 working weeks, an average output of 90,000 cu. yds. per week.

A FORM OF SCREW ANCHOR

"Expandet" screw anchors, a range of advanced screw anchors for fixing screws into masonry of all types, wood and other materials, are soon to be marketed in the U.K. by Expanded Plugs Ltd. The screw anchor range, a Danish invention, will be manufactured in this country in due course by Expanded Plugs Ltd.

These equipments are stated to be used widely on the Continent; they are presented as being able to take the place of expansion bolts. The "Expandet" range is not affected by acids, oils or chemicals, while efficiency is constant in a temperature range extending from -18 deg. C. to +80 deg. C. Eight basic plugs cover

Vlaanderen XI dredging overburden
at Westfield



the whole range of wood screws between No. 1 and $\frac{1}{2}$ in. The screw anchors may be visualized as filling a role in mining.

A NEW ROCKERSHOVEL

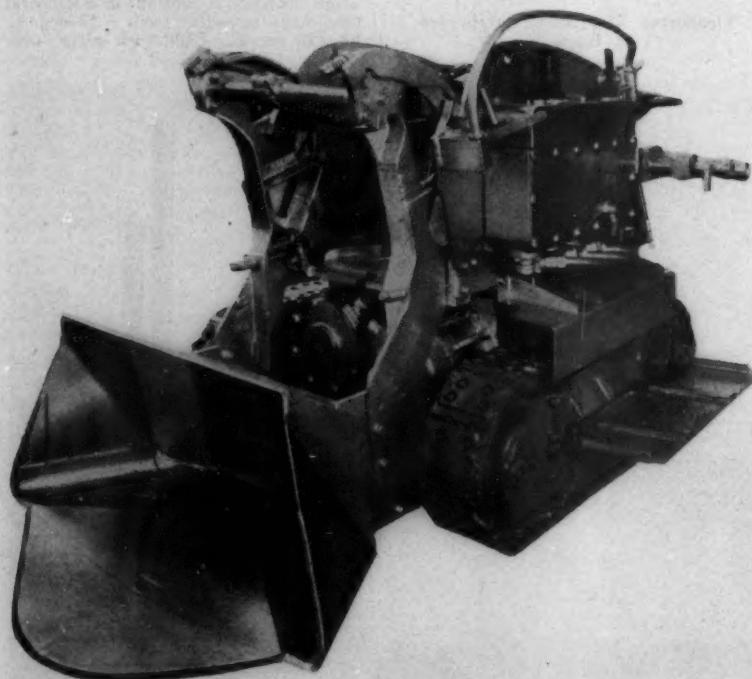
The Model 622 Rockershovel is the latest addition to the range of heavy-duty loading machines, specially designed and developed for the mining, quarrying, contracting, and allied industries by Eimco (Great Britain) Ltd. The Model 622 Rockershovel is crawler-mounted and ruggedly built to withstand the most arduous working conditions. It is available with either compressed air or flameproof electric drive.

For pneumatic operation, two 5-cylinder radial air motors, each developing 12 b.h.p., provide traction, one driving each track. A third identical motor operates the bucket and rocker arm assembly. Alternatively, the machine can be supplied for electrical operation for supplies ranging between 380 v. and 660 v. a.c. with flameproof Buxton certificated motors and control gear suitable for Class I and Class II atmospheres.

In the confined spaces of mines, tunnels, or vertical shafts, the simple overhead rocker-arm action gives five to six full buckets a minute, each a $\frac{1}{2}$ cu. yd. at a time. The $\frac{1}{2}$ cu. yd. capacity bucket covers the full width of the tracks, and four separate digging positions are provided, varying from above track level to 4 in. below track level.

On both models the overall width is 5 ft. 9 $\frac{1}{2}$ in., the headroom requirement varying from 8 ft. 10 in. to 9 ft. 1 in. and the discharge height from 5 ft. 2 $\frac{1}{2}$ in. to 5 ft. 11 $\frac{1}{2}$ in. Alternative discharge heights are available to meet special require-

Seen below is the new Eimco 622 electrically-powered rockershovel



ments. The overall length of the air machine with the bucket down is 8 ft. 9 in., while that of the electric machine is 9 ft. Travelling speed is 2 $\frac{1}{2}$ m.p.h. Weight with flat track shoes fitted is 9,000 lb. for compressed-air powered machines and 10,750 lb. on electrically powered machines.

Compressed air consumption varies according to load from 350 to 400 c.f.m., with an air pressure range of 60 to 120 p.s.i. The electric power supply range (a.c. only) is 380 to 660 v.

UNDERGROUND HYDRAULIC MINING

The N.C.B. is experimenting with hydraulic mining underground. The system, to be introduced at Trewelis, Wales, uses a $\frac{1}{2}$ in. dia. water jet, with the product washed down flumes to screens where +2 mm. coal is transferred to normal conveyors and -2 mm. is sluiced to a sump and the slurry pumped to surface. Tests will also be run at Woodsend and Markham collieries.

The N.C.B. cites the following advantages of the method: increased rate of output, simplicity, and manoeuvrability of underground equipment, the location of power plant at the surface eliminates flameproofing and the dangers of explosives are erased.

SIDE FLUSH OUTLETS REMOVE CHIPS

Grooves on the conical surface of a drill rod are used with slip-on taper socket bits to keep chips from collecting at the junction of bit and rod during drilling. The device aids effective cooling of rod and bit, facilitates the removal of sludge in soft ground, and prevents jamming. A German patent.

MINING

Annual production of manganese in Portuguese West Africa has been dropping sharply since 1953, when it reached a figure of 65,864 tons. Last year, production amounted to only 21,335 tons, but it will be considerably higher during the present year. Shipments during recent months amount to over 30,000 tons.

A rush to stake mining claims is in progress in rugged country 55 miles north-east of Chibougamau, Quebec Province, where traces of gold, copper, nickel, and cobalt have been found.

A six-man Japanese survey team has been sent to Peru to prospect for mineral resources, especially copper, lead, zinc, and iron ores. The team was organized by the Overseas Mineral Resources Development Corporation of Japan.

Better exploitation of Kazakhstan's pyrites resources is demanded by Mr. G. Kozlov, a Kazakhstan Communist Party secretary, in an article in the *Industrial and Economic Gazette*. It is stated that, for instance, the large pyrites deposits of the Altai region are not being properly exploited. They contain iron, copper, zinc, and certain rare metals, but little is being done to extract these constituents. The article places particular emphasis on the need for increased production of zinc and sulphur.

A report from Houston (Texas) states that Duval Sulphur and Potash Co. is planning to start copper production in the near future. Facilities, expected to cost some \$21,000,000, are being constructed in Pima County, Arizona, to mine and mill copper and molybdenum. The project is being financed from company funds.

The Canadian Copper and Brass Development Association has been formed as a non-trading organization supported by copper producers and manufacturers to promote and develop the use of copper and its alloys and compounds. The president is Mr. J. S. Vanderplough, president of Anaconda American Brass Ltd.; the senior vice-president, Mr. R. W. Summey, vice-president and general manager of Noranda Copper and Brass Ltd.; the secretary-treasurer, Mr. K. H. J. Clarke, manager of Canadian Sales and Market Development, International Nickel Co. of Canada. The aim of the association is to provide assistance to all concerned with copper and its affiliations from producer to consumer. The association will work in close co-operation with other similar organizations throughout the world. The head office is in Toronto.

About 100,000,000 tons of magnetite are estimated to exist in the Chitral area of West Pakistan. Other extensive iron ore deposits are believed to be present in the Dir-Swat-Jandol Bajour-Baraul-Luar-Laspur, Khandak, Lal Qila, and Shahi areas. It is expected that a systematic survey of these areas will reveal approximately 400,000,000 tons of high-quality ore. Samples so far tested had an iron content of 68 to 72 per cent.

MISCELLANY

Negotiations have almost been completed by the Japanese Mitsubishi group for the exploitation of the iron ore deposits known as "Las Adrianitas" in the Pajitas Blancas Sierra, in northern Chile.

Preparations for the dispatch of a West German geological surveying team to Uruguay to map reserves of manganese ore located 400 km. north of Montevideo in the Zayacuay area are almost completed, and the group is expected to begin its work some time in January. In Uruguay, considerable importance is attached to the project, and three mining companies have already been formed to extract the ore.

PERSONAL

In our issue of November 21, we referred on page 559 to the interesting appointment of Mr. John R. Thom, under the United Nations Technical Assistance Administration, to advise the Government of Iran in the search for

and in the exploitation of coal and metallic minerals. We now learn that Mr. Thom is on secondment to the U.N.T.A.A., and will be rejoicing Powell Duffryn Technical Services at the conclusion of his assignment.

Mr. Richard Miles, chairman of Head Wrightson and Co. Ltd., was to leave for South Africa by air today to visit the company at Johannesburg, and its associate company, Wright, Boag and Head Wrightson (Pty.) Ltd., and to make a short stay in the Federation.

Mr. L. Ingham, formerly manager of the industrial sales division, has been appointed assistant sales manager of Chloride Batteries Ltd., of Grosvenor Gardens House, London, for the sales of all types of batteries in the United Kingdom and overseas.

General meetings of the Institution of Mining and Metallurgy will be held on

I.M.E. SYMPOSIUM ON SHAFT SINKING AND TUNNELLING

Papers to be presented at the I.M.E. Symposium on Shaft Sinking and Tunnelling (Olympia, London, July 15 to 17, 1959), to which we refer on page 662 of this issue, are as follows:

From Australia: (1) Tunnelling in connection with the Snowy Mountains hydroelectric scheme, by a Senior Engineer of the Snowy Mountains Hydroelectric Authority.

From Canada: (2) Shaft sinking in Canada, by W. E. Bennett, Patrick Harrison, and George Smith, Mining Engineers of Patrick Harrison and Co. Ltd.; (3) Tunnelling in Canada, by A. Brown, Senior Mining Engineer, Mines Branch, A. Ignatieff, Chief, and M. A. Twidale, Mines Branch, all of the Fuels Division, Canadian Department of Mines and Technical Surveys.

From France: (4) Sinking a pit in the Nord and Pas-de-Calais Basin, by F. Pot, Ingénieur en Chef au Groupe de Lens-Liévin; (5) Medium-section tunnel driving in the Henin-Lietard Group, by F. Houssin, Directeur des Travaux du Fond, and R. Singer, Ingénieur du Services des Essais, both of Groupe d'Henin-Lietard.

From Germany: (6) Shaft sinking in coal mining in the Federal Republic of Germany, by Dr. Ing. F. Jansen, Bergwerksdirektor, Gewerkschaft des Steinkohlenbergwerks, Victoria Mathias; (7) Tunnelling in the Federal Republic of Germany, by Bergassessor H. Middendorf, Bergwerksdirektor, Steinkohlenbergwerke, Mathias Stinnes A.G.

From Great Britain: (8) Shaft sinking, by F. Marsh, Deputy Director-General of Reconstruction (Planning), National Coal Board; (9) Tunnelling, by R. F. Lansdown, Chief Mechanization Engineer, and W. A. McLunie, Chief Tunneling Engineer, both of the Production Department, National Coal Board; (10) Method study applied to shaft sinking and tunnelling, by J. N. Booth, Chief Method Study Engineer, Production Department, and R. G. Watt, Shaft Sinking

and Tunnelling Engineer, Reconstruction Department, both of the National Coal Board; (11) Blasting practice in shaft sinking and tunnelling, by B. G. Fish, Senior Scientist, Mining Research Establishment, National Coal Board, and R. Westwater, Head of Technical Service Department, Nobel Division, Imperial Chemical Industries Ltd.; (12) The history of cementation in shaft sinking, by F. G. Atherton, Director, the Cementation Co. Ltd., and W. S. Garrett, Managing Director, the Cementation Co. (Africa) Ltd.

From Holland: (13) Shaft sinking in Holland, by Ir. J. M. Weehuizen, Mining Engineer, Staatsmijnen in Limburg.

From Poland: (14) Shaft sinking problems in Poland, by Professor Josef Galanka, Chair of Underground Mine Construction, Politechnic, Gliwice, and Min. Eng. Boleslaw Sztukowski, Technical Director of the Enterprise for Shaft Construction, Bytom.

From South Africa: (15) Shaft sinking practice in South Africa, by H. MacConachie, Consulting Engineer, Anglo-American Corporation of South Africa Ltd.; (16) Shaft planning for mines in New Consolidated Goldfields Group, by D. M. Jamieson, M.C., Assistant Consulting Engineer, and M. P. Pearce, Chief Technical Assistant to Consulting Engineers, both of New Consolidated Goldfields Ltd.

From Sweden: (17) Shaft sinking and raising in Sweden, by V. Epstein, Mine Superintendent, L.K.A.B., Kiruna.

From United States of America: (18) Tunnelling in United States of America, by Stanley Kimball, Vice-President, Heavy Construction Division, Henry J. Kaiser Co.

From U.S.S.R.: Theoretical fundamentals of shaft sinking by the freezing method, by G. T. Mankovsky, Institute of Mining of the Academy of Sciences of the U.S.S.R.

the following dates: December 18, 1958; January 15, 1959; February 19, 1959; March 19, 1959; April 16, 1959; May 21, 1959 (annual general meeting from 4 p.m.).

CONTRACTS AND TENDERS

Formosa

Project Implementation Order No. 84-22-303-9-80399 (Invitation No. 506c) calls for four transit mixers, one pneumatic core drilling machine, three tunnel ventilation exhaust fans, one tractor excavator, two air tractor excavators, and 150 ex non-coring diamond bits. Issuing authority: Central Trust of China Purchasing Department, 68 Yen Ping Nan Road, Taipei, Taiwan (Formosa). Closing date: January 6, 1959. B.O.T. Ref. E.S.B. 29664/58 I.C.A. Telephone inquiries to Chancery 4411, extension 354.

Orders valued at nearly £700,000 have been placed with Associated Electrical Industries, heavy plant division, Rugby, by the National Coal Board, West Midlands Division, No. 1 (North Staffordshire) area. The contracts are for four winder equipments. All the winders are designed for operation on the cage-and-counterweight principle to a maximum depth of 3,900 ft. The mechanical equipment is to be made by Vickers-Armstrongs (Engineers) as sub-contractors to the A.E.I. heavy plant division.

EXHIBITORS AT THE C.U.M.M. EXHIBITION

The following is a first list of manufacturers who will be exhibiting at the Mining Machinery Exhibition to be held at Olympia, London, from July 9 to 18, 1959, under the auspices of the Council of Underground Machinery Manufacturers:

Anderson Boyes and Co. Ltd.
British Jeffrey-Diamond Ltd.
Consolidated Pneumatic Tool Co. Ltd.
Cowlishaw, Walker and Co. Ltd.
Distington Engineering Co. Ltd.
Dollery and Palmer Ltd.
Dowty Mining Equipment Ltd.
Eimco (Great Britain) Ltd.
Gullick Ltd.
Hardypick Ltd.
Hayden-Nilos Ltd.
Holman Bros. Ltd.
Austin Hopkinson and Co. Ltd.
Joy-Sullivan Ltd.
Austin Hoy and Co. Ltd.
M. and C. Switchgear Ltd.
Mastabar Mining Equipment Co. Ltd.
Mavor and Coulson Ltd.
Mining Engineering Co. Ltd.
N. J. Muschamp and Co. Ltd.
Campbell Ritchie.
Siemens-Schuckert (G.B.) Ltd.
Siskol Machines Ltd.
Richard Sutcliffe Ltd.
Victor Products (Walsend) Ltd.
Hugh Wood and Co. Ltd.

Also selected members of other associations affiliated to the Federation of Associations of Colliery Equipment Manufacturers, notably:

British Electrical and Allied Manufacturers' Association.
British Pump Manufacturers' Association.
Cable Makers' Association.
Locked Coil Ropemakers' Association.
Mechanical Handling Engineers' Association.
Miners' Electric Lamp Manufacturers' Association.
Pit Tub and Mine Car Manufacturers' Association.

Metals and Minerals

Stabilization of U.S. Aluminium Prices

The aluminium industry in the United States is currently in the position of being able to handle all demands likely to be made on it for a considerable time to come, including the potential demand from volume markets, which it has not, in the past, been in a position to exploit. This favourable position has been achieved as a result of continued expansion throughout the recession, during which no project previously started was cancelled, though work was slowed down on some and more or less suspended on others. As a result, the industry now has an available annual capacity of some 2,094,000 s.tons of primary metal, which is being further increased. By July, 1959, capacity is expected to reach 2,380,500 tons.

Present indications are that the current year's shipments of primary metal, mill shapes, and castings will be in the region of 1,750,000 tons, equivalent to a decline of some 7 to 8 per cent from the level of 1957. It is hoped that next year's shipments will be 15 per cent higher, reaching a total of 2,100,000 tons. This target is not regarded as over-optimistic, bearing in mind that the historical rate of increase in the aluminium industry has been about 10 per cent a year, save during the past two years, when there has been a slight falling off, pointing to the possible existence of a considerable unfulfilled demand. It is further believed that consumers' inventories have been worked off to the equivalent of a subsistence level and that some replenishment is overdue.

The selling campaign will be further stimulated by the more extensive price protection now offered by the leading aluminium companies. On December 5, Reynolds Metal notified customers that orders placed in December on all products would be available at December list prices if shipped on or before June 30 next. This six months' price protection replaces a policy of 60-day price protection on pig aluminium orders only. On the same day, Alcoa informed its customers that present prices would apply to all products ordered and shipped before July 1, 1959. Alcoa's action, it was stated, was taken to prevent chaos in the aluminium industry, because other integrated aluminium producers had announced that prices would remain firm only on orders placed by December 31, 1958, and shipped prior to July 1, 1959. On the following day, similar action was taken by Alcoa. While this unusual form of price war underlines the highly competitive conditions in the United States industry, the assurance of stable prices for over half a year unquestionably must be regarded as a bull point for aluminium.

As regards future markets, requirements of this order have been projected for 1959: construction and building materials, 485,000 tons; transportation equipment exclusive of aircraft, 370,000 tons; aircraft and missiles, 120,000 tons; consumer durables, 250,000 tons; machinery and equipment exclusive of electrical, 220,000 tons; electrical goods and communications equipment, 200,000 tons; containers and packaging, a mini-

mum of 110,000 tons; and miscellaneous requirements, about 300,000 tons.

Present estimates of supply exceed the estimated demand by over 400,000 tons, but will, of course, be subject to revision as the year goes by. At the start of the year, the supply schedule appears to be roughly as follows: primary production, 1,870,000 tons; secondary smelter production, 220,000 tons; and imports, 460,000 tons.

*

Representatives of the British Aluminium Co. Ltd. have arrived in Australia to examine the Bell Bay aluminium plant. The company will thereafter consider participation in the venture to expand the plant.

*

Mainland China has become a good market for French aluminium. In the first eleven months of this year, French shipments to China totalled 15,000 tonnes, and further orders have been received. This new outlet for French aluminium producers comes at a time when home production has tended to decline.

*

West German production of virgin aluminium is estimated at 135,000 tonnes for the current year, and will thus be about 20,000 tonnes less than in 1957. From February 1 to October 31 it amounted to 116,473 tonnes, being 11 per

cent less than in the same period of 1957. The decline in domestic production is attributed to higher imports, which are placed at 65,000 tonnes for the year against almost 40,000 tonnes in 1957.

The West German Bundestag (lower house) has decided to maintain, during 1959, a duty-free quota of 40,000 tonnes of virgin aluminium. West German aluminium producers had been pressing for abolition of the quota, but the processing industry demand its retention on the ground that domestic production is not enough to meet all requirements. Most of the West German imports of aluminium come from Canada.

BOLIVIAN EXPORTS

In order to encourage exports, the Bolivian authorities have decided that no export tax is in future to be paid for shipments overseas of zinc ore concentrate.

A 3 per cent *ad valorem* duty will be imposed on exports of bismuth only when the London price reaches or exceeds 11s. per lb. New bismuth mining companies are completely exempted from this requirement during the first year of exploitation.

Silver ore concentrates containing more than 500 gr. of silver per ton carry a duty of 7 per cent.

LONDON METAL AND ORE PRICES, DEC. 11, 1958

METAL PRICES

Aluminium, 99.5%, £180 per ton		Iridium, £19/£21 oz. nom.
Antimony—		Lanthanum (98/99%) 15s. per gram.
English (99%) delivered, 10 cwt. and over £190 per ton		Manganese Metal (96% - 98%) £290
Crude (70%) £190 per ton		Magnesium, 2s. 3d. 16.
Ore (60%) bases 19s. 6d./20s. 6d. nom. per unit, c.i.f.		Nickel, 99.5% (home trade) £600 per ton
Arsenic, £400 per ton		Osmium, £16/£17 oz. nom.
Bismuth (min. 1 ton lots) 16s. lb. nom.		Osmiridium, nom.
Cadmium, 9s. 6d. lb.		Palladium, £2/£25 15s.
Copper (99%) net, £16 0s. lb. delivered U.K.		Platinum U.P. and Empire Refined £19 10s. oz.
Chromium, Cr, 99% 6s. 11d./7s. 4d. lb.		Imported £17 10s./£18 0s.
Cobalt, 16s. lb.		Quicksilver, £74 0s. ex-warehouse
Germanium, 99.99%. Ge. kilo lots 2s. 5d. per gram.		Rhodium, £40/41 oz. nom.
Gold, 250s. 3d.		Ruthenium, £13/£15 oz. nom.
		Selenium, 50s. 0d. per lb.
		Silver, 76d. f. oz. spot and 75d. f.d.
		Tellurium, 15s./16s. lb.

ORES AND OXIDES

Bismuth	.....	.....	30% 5s. 0d. lb. c.i.f. 20% 3s. 3d. lb. c.i.f.
Chrome Ore—			
Rhodesian Metallurgical (semifluidable) 48% (Ratio 3:1)	.....	.....	£15 15s. 0d. per ton c.i.f.
Hard Lumpy 45% (Ratio 3:1)	.....	.....	£15 10s. 0d. per ton c.i.f.
Refractory 40% (Ratio 3:1)	.....	.....	£11 0s. 0d. per ton c.i.f.
Smalls 44% (Ratio 3:1)	.....	.....	£14 0s. 0d. per ton c.i.f.
Baluchistan 48% (Ratio 3:1)	.....	.....	£11 15s. 0d. per ton f.o.b.
Columbite, 65% combined oxides, high grade	.....	.....	nom.
Fluorapatite—			
Acid Grade, Flotated Material	.....	.....	£22 13s. 3d. per ton ex. works
Metallurgical (75/80% CaF ₂)	.....	.....	156s. 0d. ex works
Lithium Ore—			
Petalite min. 34% Li ₂ O	.....	.....	40s. 0d./45s. 0d. per unit f.o.b. Beira
Lepidolite min. 34% Li ₂ O	.....	.....	40s. 0d./45s. 0d. per unit f.o.b. Beira
Amblygonite basis 7% Li ₂ O	.....	.....	£25 0s. per ton f.o.b. Beira
Magnesite, ground calcined	.....	.....	£28 0s./£30 0s. d/d
Magnesite Raw (ground)	.....	.....	£21 0s./£23 0s. d/d
Manganese Ore Indian—			
Europe (46% - 48%) basis 55s. 0d. freight	.....	.....	83d./85d. per unit c.i.f. nom.
Manganese Ore (43% - 45%)	.....	.....	70d./75d. per unit c.i.f. nom.
Manganese Ore (38% - 40%)	.....	.....	50d./54d. per unit c.i.f. nom.
Molybdenite (85%) basis	.....	.....	8s. 1d. per lb. (f.o.b.)
Titanium Ore—			
Rutile 95/97% TiO ₂ (prompt delivery)	.....	.....	£35/£36 per ton c.i.f. Aust'n.
Ilmenite 52/54% TiO ₂	.....	.....	£11 10s. per ton c.i.f. Malayan
Wolfram and Scheelite (65%)	.....	.....	95s. 0d./100s. 0d. per unit c.i.f.
Vanadium—			
Fused oxide 95% V ₂ O ₅	.....	.....	8s./8s. 11d. per lb. V ₂ O ₅ c.i.f.
Zircon Sand (Australian) (65 - 66% ZrO ₂)	.....	.....	£14 0s. per ton c.i.f.

WOLFRAM STILL RISING

Wolfram ore dealers now indicate shipment values a shilling higher at 95s. to 100s. per ton unit c.i.f. Europe, for minimum 65 per cent material. Not much fresh business is reported to be materializing, the continued firmness of the market being ascribed largely to the reserved attitude of sellers.

In New York, tungsten ore, foreign, c.i.f. United States ports, is currently quoted at \$11.75 to \$12 per s.ton unit.

U.S. QUICKSILVER PROGRAMME

As had been generally expected, the General Services Administration of the United States has announced that it will end its purchasing programme for both domestic and Mexican quicksilver on December 31, 1958. The Government will not accept any metal delivered after that date. Opinion is divided as to whether the United States Government

will later introduce some other form of support for the domestic industry only. Meanwhile, the termination of the United States buying programme will almost certainly put prices under further pressure. In the United States itself, the price of domestic quicksilver f.o.b. New York has fallen to \$224 to \$228 per flask.

MICA IN THE U.S.

According to reports by domestic fabricators of mica to the Bureau of Mines, U.S. Department of the Interior, a total of 696.5 s.tons of block and film mica was fabricated in the first half of 1958. This was 18 per cent less than in the second half of 1957 and 15 per cent less than in the first half of 1957. Consumption of phlogopite block mica was the smallest for any six-month period since 1952, when this series of reports began, being 38 per cent lower than in the last half of 1957 and 59 per cent lower than in the first half of 1957.

subject to any alterations. On the market itself, a small contango continues to exist for lead, whilst in the case of zinc the backwardation shows little signs of disappearing, although it is reported that sizeable tonnages of European metal are now on their way to this country.

The latest figures issued by the U.S. Bureau of Mines show that during September the lead consumption in the United States was about 9 per cent above that for August at 90,200 s.tons, whilst production and imports amounted to 97,100 s.tons, although United States production continued at a rate which is not very much more than two-thirds of the 1957 monthly average. In Europe, however, the latest O.E.E.C. figures show that the production in October amounted to 53,714 tonnes, as against 48,393 tonnes for September, and that this rate of production is some 2 per cent above that for October of last year.

The American Zinc Institute figures show that for the month of November producers' stocks fell by a further 18,432 s.tons to a total of 191,744 s.tons, which compares with a maximum stock holding during July of 257,911 s.tons, with production remaining approximately unchanged.

COPPER • TIN • LEAD • ZINC

(From Our London Metal Exchange Correspondent)

During the past week there has been no definite tendency in any of the markets, and the undertone in the copper, lead, and zinc markets remains weak, whilst in the tin market there is a slightly better feeling. The week has also been without any major pronouncements either in the metal or political fields, and it is now expected that markets will not develop any special trend until after the beginning of the new year.

COPPER MARKS TIME

Although pricewise the copper market shows little change in London, overall the picture contains nothing which can give rise to the expectation that prices themselves will advance during the next few weeks. In America, producers report that sales are being maintained at a reasonable rate, and customs smelter copper appears to be moving fairly freely with one of the leading firms maintaining its price at 29 c. per lb. The offerings of scrap are very restricted at the existing basic price of 22½ c. per lb. for No. 2 scrap. The Belgians have once again reduced their price, which now stands at approximately the equivalent of 27.90 c. per lb. at Antwerp or New York, duty for buyers' account.

Consumer demand on the Continent is slack, although there have been some rumours that Russia had bought small tonnages of metal earlier this week, but overall feelings are generally fairly pessimistic. In this country, consumer demand is also slack, and on the market itself turnovers have not been impressive. Stocks in official warehouses showed an appreciable decrease at the beginning of the week, now totalling 5,996 l.tons. At the same time, there has been a tendency for the recently developing contango to be eliminated.

The strike situation in Canada remains unchanged, whilst in Rhodesia the European Mine Workers Union has demanded a 15 per cent rise in the pay of daily paid workers, and as the companies were not prepared to accept this demand, a dispute

has been declared, although it is not considered that there is likely to be any definite action in the near future.

TIN LOOKING FIRMER

The bright spot during the week has been the tin market, and here, apart from a firming up of the price itself, a backwardation has tended to develop, thus underlining the shortage of metal available for the market. This is emphasized by a reduction in the stocks in official warehouses by 283 tons at a total of 17,073 tons. In general, consumer demand remains satisfactory, and there have been reports of slightly more interest being shown, both in America and in Europe.

The latest figures issued by the Government of Malaya show that from January to November of this year exports of tin amounted to 44,022 l.tons, as compared with 65,838 l.tons for the similar period in 1957. Other statistics which have just become available show that during the first six months of this year Indonesia exported 10,036 l.tons of tin in concentrate as compared with 12,043 tons during the corresponding period of last year. It should be pointed out, however, that this period does not include the months which have suffered most from the International Tin Agreement's export restriction scheme. On Thursday morning, the Eastern price was equivalent to £785 per ton c.i.f. Europe.

WAITING FOR THE NEXT QUOTA ANNOUNCEMENT

The lead and zinc markets have both been relatively idle, with no items of news to influence them one way or the other. While a United States Government official has indicated that the import quota system into the States would probably remain for at least a year, he gave no indication as to whether the amounts of the various quotas would be

GETTING AROUND THE QUOTA?

One of the first results of the imposition of import quotas into the States has been the increase in offerings to that country of semi-fabricated lead products such as sheets and pipes, and the United States manufacturers of these items are now beginning to complain of unfair competition and are asking that something should be done to help them. But it appears that under existing legislation it will be extremely difficult to raise the tariff or to cut down the import without going through the whole procedure of reference to the tariff commission, and as is known from recent experience with the metals themselves, this takes a long time and the result is not always that desired by those who originated the complaint.

It appears that some of the results of the American action are only now just beginning to be apparent, and it may be that there are a number of others which will develop during the coming months. One thing, however, appears to be certain, and that is that the United States lead and zinc markets are now completely isolated from the London Metal Exchange prices. From past experience when this state of affairs exists, there is no knowing what effects it may have, but whatever they may be, they will probably be detrimental to the lead and zinc industries throughout the world.

Closing prices are as follows:

	Dec. 4		Dec. 11	
	Buyers	Sellers	Buyers	Sellers
COPPER				
Cash ..	£219½	£219	£221½	£222
Three months ..	£219½	£219½	£221½	£221½
Settlement ..	£219		£222	
Week's turnover	9,950 tons		11,425 tons	
LEAD				
Current ½ month	£71½	£71½	£71½	£71½
Three months ..	£71½	£72	£72	£72
Settlement ..				
Week's turnover	5,450 tons		6,050 tons	
TIN				
Cash ..	£753	£7534	£762	£763
Three months ..	£756	£756½	£762	£762½
Settlement ..	£753½		£763	
Week's turnover	1,170 tons		925 tons	
ZINC				
Current ½ month	£72½	£72½	£73½	£73½
Three months ..	£69	£69½	£70	£70
Settlement ..				
Week's turnover	7,000 tons		8,925 tons	

Mining Finance

Anglovaal's Quarter-Century

This year was important for Anglovaal in more ways than one. Twenty-five years have passed since the company was formed in 1932, and at the annual meeting, held for the first time in the new administrative building of the group, the chairman, Mr. S. G. Menell, devoted much of his address to a review of the events of the last quarter-century.

From his position at the apex of an organization which has so expanded that now it gives employment to more than 53,000 people, and pays out more than £6,000,000 each year by way of dividends, Mr. Menell was able to take a view of the past and put it into perspective with the future. During the period his company has been in existence, it has seen the national income of the Union rise from £200,000,000 to almost £2,000,000,000. In 1932-3, the capital formation factor of the Union was estimated at £40,000,000; last year the figure was £500,000,000.

From these figures, it is quite apparent that the Union's power to finance its own expansion is considerably greater than it was twenty years ago. Another indication of this is the fact that of the Union's public debt in 1932, only 40 per cent was held internally, a figure which had risen to 92 per cent in 1957.

Nevertheless, even the current rate of capital formation is insufficient for South Africa, for in spite of the huge strides made already, the nation is still far from fully developed. There are still extensive mineral deposits to be exploited, including ample fuel sources for many years to come, and agricultural resources are by no means fully employed. For these reasons, overseas capital is still as vital as ever, and Mr. Menell examined the causes for South Africa's difficulties in competing for a commodity already in short supply.

Most important of the reasons, thought Mr. Menell, was lack of knowledge overseas regarding South Africa's potential. This, he thought, was largely due to the rapidity of the nation's expansion, which had left many South Africans themselves far behind in their knowledge of current developments.

Combining with capital shortage to limit the rate of expansion was the question of labour. Here, Mr. Menell placed responsibility firmly on the government. "We place a discount on the services of a very large proportion of our population by confining them to certain limited spheres . . . and we are not attracting . . . in anything like sufficient numbers, the skilled brainpower and initiative of the Western World". Anything tending towards a planned economy was detrimental, and private enterprise was the key to real progress.

Anglo-Transvaal's progress over the past quarter-century is certainly such as to gratify the founders of the company, and results for 1957-8 continued the story of expansion, innovation and diversification. Over the past ten years dividend income has increased more than fivefold, from £130,153 to £687,017, and during the same period gross revenue has risen from £588,350 to £1,134,481. In

this period five new gold mines have been floated by the group, and, indeed, only one of the major mines of the group was in existence before the war. Most recently, the company took a leading part in the Zandpan flotation and in the merger of Loraine and Riebeek. Both of these mines will be administered by Anglovaal, so that there is no reason why the company's growth should not continue for some considerable time to come. At present, the shares are priced at about 40s. to yield 6.1 per cent. Taking into consideration the dividend cover of 1.8, the shares look attractive for growth, and, in time, higher income.

RAND DIVIDEND SEASON OPENS

The half-yearly Rand dividend season opened this week with the declarations by the companies of the Gold Fields, General Mining and Anglo American groups. Most of the payments were much as had been anticipated. Noteworthy among the Gold Fields announcements was the beginning of capital repayments by Sub Nigel, one of the group's older mines, while among General Mining companies the absence of an increased dividend from Buffelsfontein was disappointing. Vaal Reefs, of the Anglo American group, is paying 2s. against 2s. 3d. this time last year, but Brakpan has unexpectedly raised its dividend to 6d.

The declarations are summarized below, together with the last three half-yearly dividends for comparison.

Gold Fields	s. d.	s. d.	s. d.	s. d.
	June	Dec.	June	Dec.
D'nfontein	1957	1957	1958	1958
Libanon	6	1 0	1 0	1 6
Luipaards	3½	3½	3½	3½
Rietfontein	1 0	1 1	1 1	1 0
Robinson	1 1	1 1	1 0*	1 0*
Simmer	6	9	6*	6*
Sub Nigel	5	5	6*	6*
Venterspost	1 9	1 6	1 6	1 6
Vlakfontein	10½	10½	10½	10½
Vogels	10	11	11	1 0
W. Drie	1 4	1 2	1 0	1 0
	3 3	3 6	3 9	4 0

General Mining

Buffels	—	1 6	1 6	1 6
S. Roodep't	1 1½	1 1½	1 1½	1 1½
Stilfontein	1 0	1 10½	1 10½	1 10½
W. Rand.	—	—	—	—

Cons. 2 0 2 3 2 0 2 3

Anglo American

Brakpan	4½	4½	4½	6
Dagg.	2 6	2 9	2 6	2 6
E. Dagg.	9	9	7½	7½
S.A. Land	1 6	1 6	1 6	1 6
Springs	—	4½	—	4½
Vaal Reefs	1 3	2 3	1 6	2 0
W. Reefs	1 3	1 3	1 3	1 3

*Capital Return

Three holding companies have also made their half-yearly declarations. West Witwatersrand Areas has made an unexpected increase in its payment from 1s. 7½d. on the last two occasions to 1s. 9d. this time. East Rand Extensions is paying a final of 1s., which makes a

total of 1s. 9d. for the year, compared with a single payment of 1s. 3d. for 1957. Southern Van Ryn is to pay 7d. against 5d. last year.

THE MAWCHI REPORT

The report and accounts of Mawchi Mines, the first since Lt.-Gen. Sir Ernest Wood became chairman, were published this week.

Production during the year to March 31 last amounted to 623 tons of mixed concentrate. This is a substantial increase over the 241 tons produced in the preceding year, no mean achievement in view of the difficult conditions under which the joint venture company has to work. Unfortunately, the increased production did not bring profitability in its train because of the precipitous fall in the wolfram price. Production in the current year to date of 304 tons is running a little below last year's level.

The loss for the year amounted to £17,986, compared with £115,723 in 1956/7. The more recent figure is somewhat understated, however, in view of the fact that the accounts are drawn up as if the company's mining business had terminated at August 31 last, the date of the retrospective transfer of the company's assets to the joint company.

Unfortunately, General Wood has not had time since his return from Burma to prepare a statement for incorporation with the accounts. In order to include the results of the visit to Burma, circulation of the chairman's statement is to be deferred until about one week before the annual meeting on December 30, when, in addition to the usual business, new articles of association are to be submitted, and a change in name to Mawchi Holdings proposed.

Meanwhile, operations in Burma continue to be hampered by insurgent activity. Although the Burmese Government maintains a garrison at Mawchi, five workmen were killed within the perimeter of the mine early in October, and on November 7 a company Landrover was ambushed, wounding three persons.

CORNER HOUSE OFFER RESULT

The results of the offer by Corner House Investment for the shares of some of the dying mines of the Rand Mines group were announced this week. They were as follows:

Mine	% acceptance
Modder B.	68
New Modder	70
Rose Deep	57
T.G.M.E.	75

These results are probably neither better nor worse than could have been expected, in view of the fact that the offers were hardly attractive to British shareholders, and quite definitely unattractive to high tax-payers. Indeed, taking into account the shares held within the group and the fact that a high rate of accept-

(Continued on page 672)

ANGLO-TRANSVAAL CONSOLIDATED INVESTMENT COMPANY LIMITED

CHAIRMAN'S REVIEW GROWTH OF GROUP SURVEYED

The Twenty-fifth Annual General Meeting of the Anglo-Transvaal Consolidated Investment Company, Limited, was held on December 5 in Johannesburg.

Mr. S. G. Menell, the Chairman of the Company, presided, and in the course of his address to members said:

I welcome you to the twenty-fifth Annual General Meeting of our Company and the first to be held in the new administrative building of the Anglovaal Group of Companies.

The financial results for the past year and a review of the activities of the principal companies of the Group are dealt with comprehensively in the Report before you, and I therefore do not propose dealing with them in any great detail now. From the Balance Sheet you will notice that in addition to our revenue reserves amounting to £3,890,000, the market value of our principal asset, namely: our quoted share portfolio, last June exceeded the book value by some £2,500,000, and this figure is now £3,600,000. The year's results were again satisfactory, the profit before taxation being slightly in excess of the comparable figure for last year. However, the most significant feature of our revenue is the dividend income, which was £687,000 for the year. This source of income from our investment portfolio has increased progressively, and it is interesting to note that dividends as a percentage of our revenue have increased from 10 per cent in 1948 to 61 per cent for 1958.

Five New Mines in 10 Years

During the year under review, your Company embarked upon several new enterprises. Recently we launched the Zandpan Gold Mining Company, which adjoins the Hartebeestfontein Mine in the Klerksdorp area. It is the fifth new gold mine launched by our Group during the past ten years. Later in this address I shall refer to the growing power of South Africa to generate some of its own capital requirements. In this connection I am happy to say that we have been instrumental in directing some of this resurgent economic power into a new gold mine. The Federale Mynbou, which is associated with the Sanlam group of institutions in Cape Town, has recently agreed to provide a sum of £1½ million towards the initial development of the Zandpan Mine, thereby becoming linked in this new mine with the Anglo American Corporation, General Mining Corporation, and ourselves. This blending of the Federale Mynbou, the newest mining house, with the older groups is a happy augury in the development of our country's natural resources.

In association with the Anglo American Corporation and General Mining Groups, we completed the successful merger of the Riebeek and Loraine Gold Mines. The amalgamated property has come under the technical control of your Company.

The recent formation of the American South African Investment Company was a significant financial development in which we and our associated companies co-operated by making available for sale to that Company certain blocks of shares.

Twenty-five Year Achievement

As this is the Twenty-fifth Annual General Meeting, it is appropriate for me to refer to the growth of our Company over the period of its existence. When your Company started operations a quarter of a century ago, it was characterized by what was common to the founding of so many of our large corporations. It had limited capital, few assets and prospects, but it did have unlimited enterprise. Today our Group gives direct employment to nearly 54,000 people, of whom over 8,000 are Europeans.

The Group's aggregate dividend payments now amount to over six million pounds per annum.

The market value of the issued capital of all the quoted companies in the Group amounts to over £100 million.

A brochure covering the activities of the Group over the past 25 years is being prepared, and will be circularized to shareholders in due course.

The growth of your Company is interwoven with the development of South Africa itself. Many of you have seen our country grow from an exporter of gold and raw materials into a young but rapidly maturing industrial complex, and in many respects well on the road to attaining a substantial measure of industrial self-sufficiency. Today the country stands on the threshold of even greater development. Our mineral resources are extensive and as yet by no means fully exploited. Coal reserves are vast and we have plentiful supplies of iron ore, manganese, and chrome. In addition to these, we are one of the world's largest producers of uranium, in itself the most valuable source of energy the world has ever known. We have also agricultural, pastoral, and timber resources still awaiting to be exploited to the full. While there are obvious long-term potentialities in our undeveloped natural resources, these, in themselves, do not postulate that this country should go from strength to strength economically. For, the turning to the fullest account of the natural resources with which this country is so generously endowed, there are the limiting factors of capital and manpower.

Overseas Capital Vital

Like all countries of great potential, South Africa's demands for capital are prodigious, the flow of which is a vital factor which will determine our rate of future expansion. Today there is a worldwide scarcity of capital, and since many countries require this for their own expansion, we have to compete in an international market for new capital. In the past there have been several factors which have militated against South Africa obtaining her full capital requirements from sources outside her borders. The most important of these, to my mind, is lack of knowledge of the opportunities which exist here and which will undoubtedly still further increase. This lack of knowledge may in large part be due to our own rapid growth, which has often left even South Africans themselves far behind in their knowledge of current South African developments. In 1932, the National Income was £200 million, and in 1957 it had risen to almost £2,000

million. The degree of evolution which has occurred in our economy may be best illustrated by the increasing ability of South Africa to generate some of its own capital requirements. The South African Reserve Bank for 1932-33 gave the Union's capital formation factor as £40 million. In 1957 this figure had risen to £500 million. A further pointer is to be found in the change of domicile of the public debt. In 1932 the gross public debt of the Union was over £260 million, of which 40 per cent was internal. By 1958 the gross public debt had increased to more than £1,150 million, of which 92 per cent was internal. While these figures provide a clear demonstration of South Africa's ability and willingness to finance an increasing proportion of its own development out of its own resources, there is naturally a limit to the expansion which we can achieve alone.

It is, therefore, imperative to attract overseas capital, and this can only be done in an atmosphere of free enterprise, and not in an atmosphere circumscribed by consideration of control of capital or of manpower.

We believe firmly in private enterprise and we believe it is only through private enterprise that we will attract the required capital, know-how, and skilled manpower.

Use of Manpower

This brings me to the question of manpower, which I regard as the other serious limiting factor to any real expansion in this country. We place a discount on the services of a very large proportion of our population by confining them to certain limited spheres of labour and production, and we are not attracting to our shores, in anything like sufficient numbers, the skilled brainpower and initiative of the Western world. While I fully appreciate that State policies must inevitably impinge to some extent on private enterprise and on freedom of utilization of capital and manpower, there is a tendency nowadays towards something suggestive of planned economy, which, to my mind, is detrimental to the expansion of a free economy, and which can only lead to artificial barriers to normal expansion. These theoretical concepts, if applied, may ultimately restrict the normal enterprise and initiative of our population.

Planned economy imposed by the State is the last resort in any country which is in danger of becoming financially and politically bankrupt, but has no place in a thriving economy where the fundamental laws of supply and demand apply at all times. Fundamental economic laws must be tempered by restraints imposed by the State so as to guard against the exploitation of labour or of the consumer, but if such restraints are allowed to become the happy hunting ground of bureaucracy, which in countries overseas seems to invade every sphere of national life, then we cannot expect to expand our economy in a healthy way. The power of controlling the economy is dear to the heart of every bureaucrat, and to many politicians as well, and they can always adduce many plausible reasons for this. Private enterprise, however, is still the only key to real progress, and this has been the primary force behind the growth which this Company has shown.

Higher Gold Production

One of the most important changes which have taken place over the last 25 years in the economy of the country is the diversification which has occurred

as a result of the growth of secondary industry. However, our economy is still based largely on the prosperity of the gold mining industry, which it is estimated will this year produce gold and uranium of a value of about £265,000,000. It is this contribution made by the gold mining industry which enables our country's balance of payments to be kept under control. Nevertheless, it is pleasing to see that such strenuous efforts have been made over the last 25 years by secondary industry to lessen the country's economic dependence on gold. Some will say that there was bound to be a conflict between the gold mining industry, with a fixed price for its product, and therefore striving to maintain a low cost of production, and secondary industry, which is able, to a large extent, to pass its increased costs on to the consumer. However, secondary industry is realizing more and more that its real hope of survival is in mass production and in a higher standard of efficiency with the requisite quality to enable it to compete in world markets. There is, in fact, a great deal of common ground for all types of industry and all—whether primary or secondary, mining or manufacturing—should stand together for certain basic principles. The first of these is a standard of efficiency or logical advancement towards proficiency which will give low unit costs of production. Therefore, whether it be in mining or in manufacturing, it is the greater and more efficient use of our labour force, as well as our raw materials, which will assure us our future prosperity. Labour is cheap only in relation to its productivity, and the true measure of cheapness is not the wage rate per shift or per week, but the rate paid for a unit of output.

Expanding Market

Perhaps one of the most dramatic of the changing patterns which has occurred in our generation has been the absorption of the non-White people into the economy of the country as a whole. The more effective utilization of non-Whites has been progressively increasing, and at the same time their literacy has advanced rapidly. It is estimated that whereas ten years ago only 21 per cent of the non-White population could read and write, today that figure stands at 35 per cent. At the present time over 50 per cent of the non-White children attend schools, and it is estimated that within 20 years illiteracy will be virtually eliminated in South Africa. With a greater degree of literacy, increased productivity would follow naturally, and this would lead to higher earnings which then become economically possible. Higher earnings in turn would make for greater purchasing power of all sections of the population, with an enhanced demand for goods to the ultimate benefit of all. Today it is estimated that 37 per cent of all the sales of consumer products are made to non-Whites, and their increased earning power indicates clearly where the potential for an increased market for consumer goods lies in this country. The proper utilization of the labour and services of this section of our population thus provides the greatest challenge for the future.

During the last 35 years the population increase in the Union of South Africa has been about 7 million. During the next 35 years it is expected that the population increase will be about 14 million. This factor, coupled with a progressively improving standard of living of our entire population, may well create a period of unprecedented prosperity,

which, of course, will be accelerated when a less rigid attitude is adopted towards raising the price of gold.

Like any similar group in the mining and industrial fields, we have had our ups and downs; but on the whole there has been steady growth, consolidation, and an enterprising pursuit of new business at all stages, which has brought us to our present position, and this spirit will animate us for the next 25 years.

Just as we can look back upon your Company's last 25 years with gratification, we now look forward to the future with great confidence as we take our place in the era of industrial revolution—continuing to build up the material prosperity of South Africa, and with it the living standards of all its inhabitants.

Conclusion

In conclusion, I wish to express my sincere thanks to my co-Managing Director, Mr. B. L. Bernstein, and to my other colleagues on the Board. Furthermore, on your behalf, I thank all employees, both at the Head and London offices of this organization and all employees of the mines and factories associated with this Group for the loyalty they have shown and the efforts they have made during the past year.

The Report and Accounts for the year ended June 30, 1958, were then adopted, and the retiring Directors, Messrs. M. G. Deacon, Anton Gray, L. P. Kent, and A. A. von Maltitz, were re-elected.

The Joint Auditors' remuneration for the year was fixed.

SOUTH ROODEPOORT MAIN REEF AREAS, LIMITED

(Incorporated in the Union of South Africa)

Report of Proceedings at Twenty-Fourth Annual General Meeting of Shareholders Held on Tuesday, November 18, 1958

Mr. C. S. McLean, Chairman, in referring to the results for the financial year ended June 30, 1958, stated that the tonnage milled at 350,000 tons, with an average recovery of 4.73 dwt. per ton, produced a working revenue of £1,039,272, which together with sundry revenue of £15,849 gave a total income from all sources for the year of £1,055,121. Working Expenditure amounted to £745,960, leaving a profit for the year of £309,161, an increase of £4,395 over the figure for the previous year. Appropriations for Taxation, Capital Expenditure and Pneumoconiosis Outstanding Liability totalled £147,328 and Dividends Nos. 32 and 33 of 1s. 1d. per share each absorbed £159,824. The unappropriated balance of profits carried forward was £140,642, which included a refund of £13,299 in respect of taxation paid for previous years.

Development footage accomplished during the year was 29,181 feet, of which 14,955 feet were sampled and 4,265 feet, equivalent to 28.5 per cent, proved payable with an average value of 293 inch dwt. The fall in the percentage of pay-

ability from the previous year's figure of 39.9 per cent was attributable to the necessity in this mine for constant exploration of new areas, with fluctuating results. During the year under review, such exploratory work was carried out on a larger scale than hitherto, making the fall more pronounced.

The Ore Reserves decreased by 32,000 tons to a total of 1,093,000 tons with an average value of 4.9 dwt. over 47 inches.

Prospecting operations on farm Rietvlei No. 241 to the north of the present lease area were continued with encouraging results which warranted the continuation of this exploratory work; they had indicated, however, the broken nature of the area, making it difficult at this stage to determine its full potential.

The Meeting unanimously adopted the Directors' Report and Audited Accounts and the retiring Directors were re-elected.

A special Resolution amending Article 13 of the Company's Articles of Association in order to permit the use of mechanical signatures on share certificates was passed.

MINING FINANCE—Continued

ance was to be expected from South African shareholders, it looks as if U.K. investors have largely opted out.

It has also been announced that Corner House has bought *en bloc* a portfolio of dividend-paying shares from Rand Mines at a consideration of £199,085. At the same time, Rand Mines (125,000), New Union Goldfields (75,000) and Transvaal Consolidated Land (25,000) have subscribed for 225,000 Corner House shares at par.

Dealings in Corner House shares are expected to begin on Christmas Eve.

New Guinea Gold Earns More.—Net profit for the year ended June 30 last of New Guinea Goldfields improved from £70,349 to £84,654. A dividend of 3d. per share, to be paid from the gold mining profits reserve, is recommended. Meeting, Sydney, December 15. Mr. J. Kruttschnitt is chairman.

Welgedacht and Utrecht Colliery.—Speaking at the annual meeting of Welgedacht Exploration, Mr. T. Reekie, the chairman, said he could give no indication of when it would be possible to

start dividend payments. It was not merely a question of the company's available cash resources, said Mr. Reekie. If certain suspensive conditions were not fulfilled by the end of 1959, Welgedacht would have to pay the balance of the purchase consideration of the Utrecht Colliery by the end of that year.

Emperor's Improved Profits.—New records in tonnage, grade and gold produced brought the net profits of Emperor Gold Mining Co. up to £21,030 (Fijian currency) against £890 in the year to June 18, 1958. The Fiji Government is to pay a subsidy of £2 per oz. of gold produced by the company. The meeting of the holding company, Emperor Mines, is being held in Melbourne today. Mr. Wallace H. Smith is chairman.

Good Values at Can-Erin.—Channel sampling at Can-Erin Mines' Mountain mine has been completed. Values averaged 6.84 per cent copper over 6 ft. on a sampled footage of 100. The beach is being continued in the North-South orebody, which is also to be tested by

MINING FINANCE—Continued

drilling to the 1,200 ft. horizon. Later, down-hole drilling will be undertaken when a station is developed from a bench on that horizon.

Difficult Year for Rahman.—The result of operations by Rahman Hydraulic Tin in the year to June 30 last was a loss of \$M142,224, compared with a loss of \$54,032 in the preceding twelve months. This has reduced the balance carried forward from \$223,554 to \$84,269. In his circulated statement the chairman, Mr. J. G. Brown, says that overheads have been severely cut, and although this year's accounts do not reflect the economies to any significant extent, it is hoped that there will be no further deterioration in the financial position. Meeting, Penang, today.

Tongkah Harbour.—Tongkah Harbour Tin Dredging earned a net £77,616 in the year ended June 30, 1958. This compares with £115,638 in the 1957 financial year. A single dividend of 1s. per share has been declared, compared with a total of 3s. previously.

Esperanza Copper.—Although the mine and mill has been working efficiently, the difficulties of work in Cyprus at the present time resulted in a loss of £11,406 by Esperanza Copper and Sulphur in the year to March 31 last. The subsidiary, Cyprus Sulphur and Copper, made a loss in the same period of £73,976.

Rhodesia Monteleo.—After writing off a bad debt of £16,602, the net loss of Rhodesia Monteleo Asbestos for the year ended June 30, 1958, was £10,356, increasing the debit balance carried forward to £69,203. The Rhomonte mine remains on care-and-maintenance. Meeting, Salisbury, today.

Cohen Offer Success.—The offer by George Cohen 600 Group for the shares of G. Beaton and Son has been accepted by holders of more than 91 per cent of that company's equity, and is now unconditional.

National Overseas and Grindlays.—At an extraordinary meeting of National Overseas and Grindlays Bank on November 25, it was unanimously decided that the name of the company should be altered to National and Grindlays Bank with effect from January 1, 1959.

Geomines Close Lithium Plant.—The largest tin producer in the Belgian Congo, Geomines, earned a net profit of 58,980,000 Belgian francs in their year ended June 30 last. This compares with 89,620,000 francs in the preceding twelve months. The annual report states that the laboratory and pilot plant for the production of lithium has been closed as a result of the surplus of lithium on world markets.

Lake George Mining.—Although the effects of lower metal prices were to some extent offset by an increase in production and economies in working costs, the result of operations by Lake George Mines (Pty.) in the year to June 30 last was a loss of £28,249 on group account, compared with a profit of £1,023 in the preceding twelve months. The group deficit to be carried forward now amounts to £39,309. Lake George Mining Corporation say that no dividend can be paid as no income was received from the operating company.

(Continued on page 674)

NATIONAL MINING CORPORATION

The annual general meeting of National Mining Corporation Ltd. was held on December 5 in London.

Mr. C. J. Burns, Chairman, presided. The following is an extract from his Statement, circulated with the Report and Accounts for the year ended March 31, 1958:

In spite of difficult market conditions and a recession in the United States, the Company earned profits during the year of £29,000 against £63,000 in the previous year, but the latter included a substantial and non-recurring contribution from the sale of the Corporation's holding in Premier Oil. The value of the investments at the date of the Balance Sheet showed a depreciation of some £13,000 against the book cost, but as the result of improved markets since, today's valuation shows a satisfactory increase over book cost. Sufficient profits were, in fact, made to allow for a distribution of a 10 per cent dividend; but unquoted investments being in the development stage, no immediate profit from that source can be expected. It is only prudent, therefore, to conserve our resources and your Board are unable to recommend a dividend this year.

Nigeria

During the period under review we have witnessed a drastic fall in the price of base metals. Because of this fact it

was impossible for the Mines Development Syndicate (West Africa) Limited to raise the capital to bring their property to production. Consequently, this property, although already a proven mine, must await more favourable price conditions. We are advised that even at the lowest prices reached of £68 and £61 per ton lead and zinc respectively during recent months, the mine would still have been a profitable proposition.

Canada

Your Corporation's interests in Canada, particularly in Ladco Company Limited, have been greatly strengthened by the increase in the rate of domestic building, especially in the Winnipeg area, during 1958. The Canadian National Railway have recently begun a \$45,000,000 expansion scheme on workshops and sidings in Winnipeg. The inevitable demand for housing which will accompany this expansion can only be satisfied by Ladco, which owns the only serviced lots in the area. Your Board consider that this investment during the next 18 months should show very substantial capital profit.

The remaining interests in Canada, namely: Loders Lime and Alberta Ytong, passed through a difficult year in 1957, due in the main to a temporary recession in building activities.

The report and accounts were adopted.

GRADUATE WITH MINING DEGREE

from a recognized school of mines or university and with not more than one year's subsequent experience required by

large copper mine in Northern Rhodesia

Successful applicant will initially undergo course covering practical and technical training with view to an official position.

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LONDON MARKET HIGHLIGHTS

Mining share markets were generally uncertain for most of the past week. Even gold shares seemed to lose their recent ebullience, especially when they started the week very much on the wrong foot with the threat of a full-scale strike on the Orange Free State goldfield. Previously there had been several strikes at individual mines (among them Western Holdings and President Steyn) and all stemmed from dissatisfaction with the election of committee members for the Mines' Benefit Society. Luckily, all the strikes were short-lived and intended as a protest against the alleged irregularities of these elections. There was no quarrel with mine managements.

The other major factor in the gold share market was the emergence of the first of the half-yearly Kaffr dividend. Those of the Gold Fields group were eminently satisfactory, particularly the increased payments from Doornfontein and West Driefontein. Doornfontein rose to a three-year peak of 32s. 6d. on the news. It was pointed out that if this young producer did no more than maintain its latest dividend in June the shares would yield over 9 per cent, well above that normally expected from a new mine of this calibre.

West Wits made a small increase in its interim while the first return of capital from Sub Nigel of 1s. 6d. was considered to be up to best expectations and the shares jumped 9d. to 15s. 6d.

In the General Mining group, there was some disappointment with lack of an increase in the Buffels' payment and the shares dropped to 43s. 6d. Similarly, among the Anglo American Corporation dividends, Vaal Reefs' 2s. payment did not measure up to previous hopes.

Meanwhile, the buying in the previous week that had lifted "Freddies" to 8s. 6d. came to an abrupt halt. Again there was no obvious reason for the previous Johannesburg demand and the appearance of profit-takers soon lowered the shares to 7s. 9d. The Western Areas' project, which lies to the south of Randfontein, has been shelved for the time being, so that "Freddies" cannot benefit from that for a while. The other possibility is that some sort of deal may be done over the "Freddies" area farms Leclusa and Bandon which are wedged in between Loraine and Riebeek. But with "Freddies'" assets being around 2s. 2d. a share, such a deal would have to be a good one for the shares to justify the present price. Even so, Cape buyers were still prepared to be nibbling again after the setback.

West African shares were marked down by small amounts on Wednesday but there was little activity. The market might well have been expected to react more sharply to Camp Bird's statement this week, the text of which appears on page 656, together with that of an open letter from the Ghana Chamber of Mines and a report from Accra. A number of questions remain unanswered as yet regarding how it is proposed to implement the Ghana Minerals Corporation contract, which Camp Bird states has been accepted in principle by the Ghana Government. Not least, it is difficult to see how the government, which has been subsidizing the majority of gold mining companies in the West African market, would expect to be able to impose a 10 per cent tax on the value of production without forcing mine closures, which they have been at such pains to avert. It is perhaps the incompatibility of the proposed tax with the government's past actions which is prompting investors to wait and see. The wisdom of this policy became apparent when the Ghana Government was reported yesterday as denying that any such agreement had been concluded.

Copper shares, which were not looking particularly bright to begin with, became distinctly depressed when the metal price fell to nearly £215 at one time. A later rally on Wall Street and in the commodity price induced a firmer tendency, but prices remained very sensitive. Lead-zincs behaved similarly.

The previous week's news of an increase of from 30 to 40 per cent in Malayan company taxation proposed for next year, countered any benefit the tin share market might have received from a firm metal price. Rambutan were additionally upset by a reduced interim and eased to 15s. Worse still, Beralt decided that despite the recent improvement in wolfram it would be prudent to pass over the payment of an interim dividend this time; the shares immediately fell 1s. to 29s. 6d. on the news.



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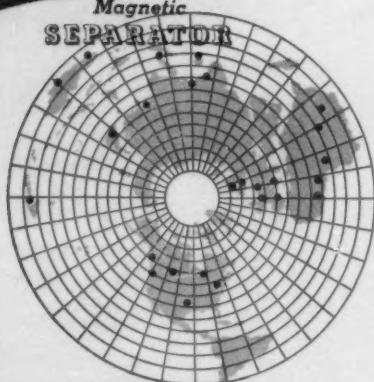
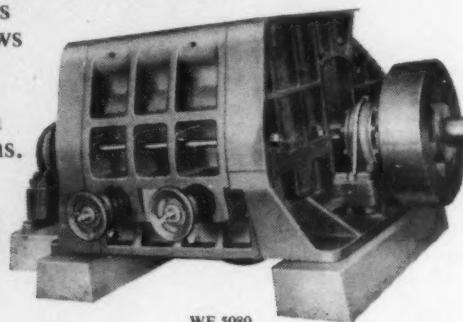
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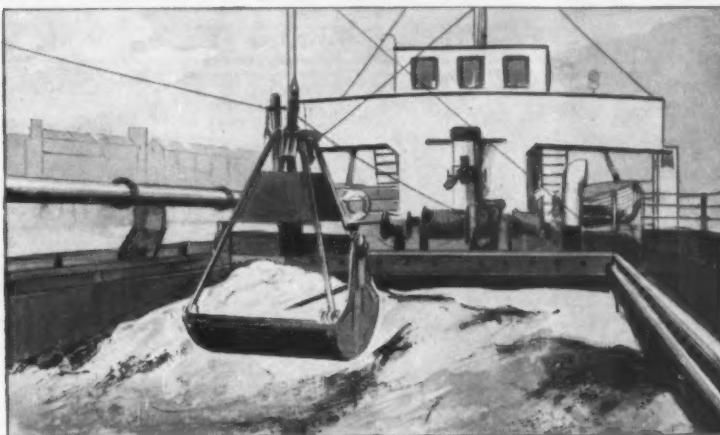
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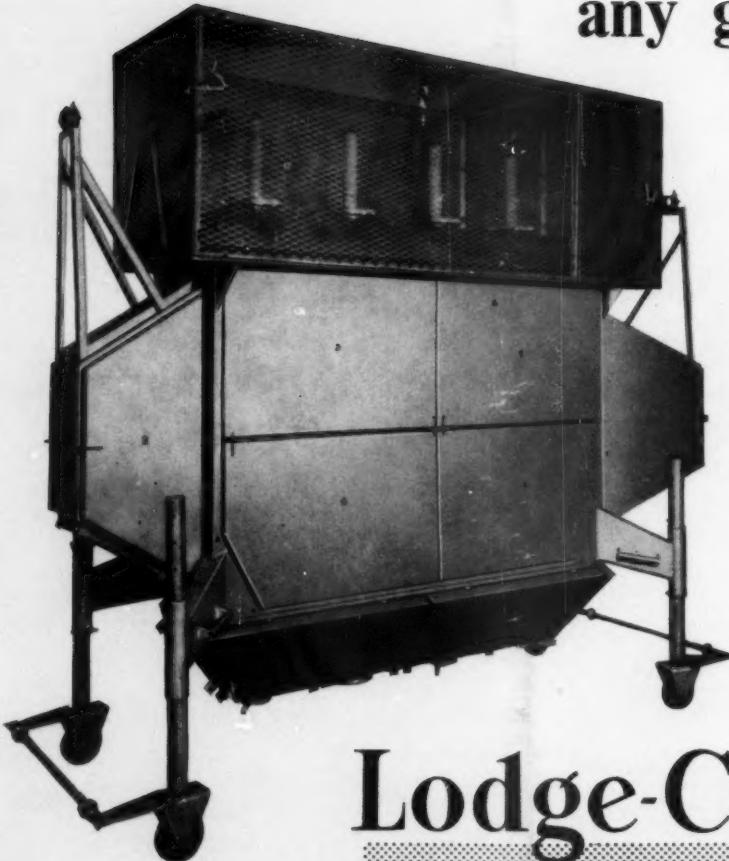
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L.C.32

